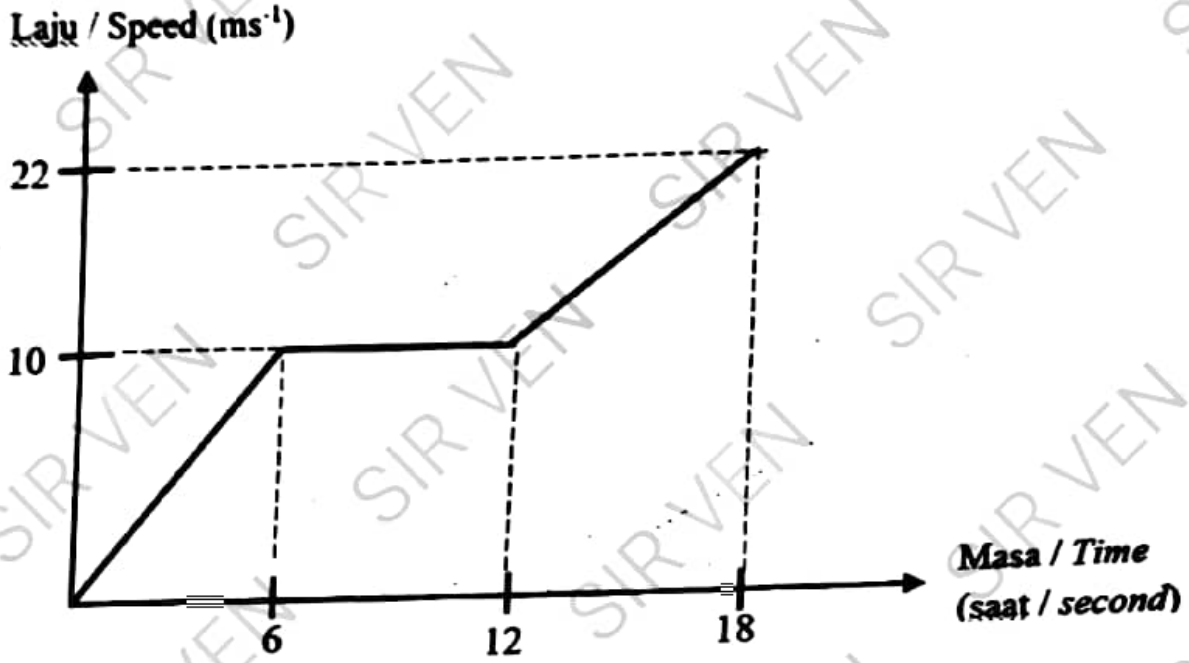
SOALAN NEGERI GRAF OF MOTION OR GERAKAN GRAF

SPM MATHS

KSSM SIR VEN

Scanned with CamScanner

8 Graf laju masa dalam Rajah 8 menunjukkan kelajuan sebuah zarah.
The time speed graph in Diagram 8 shows the speed of a particles.



Rajah 8 / *Diagram 8*

JOHOR SET 1

(a) Hitung laju purata, dalam ms^{-1}, zarah dalam tempoh 18 saat.
Calculate the average speed, in ms^{-1}, of a particles in 18 seconds.

(b) Huraikan Gerakan zarah bagi tempoh 6 saat yang kedua.
Describe the motion of the particles for the next 6 seconds.

[4 markah / 4 *marks*]

Scanned with CamScanner

(a) $\frac{1}{2}(12+6)\,10 + \frac{1}{2}(10+22)\,6$

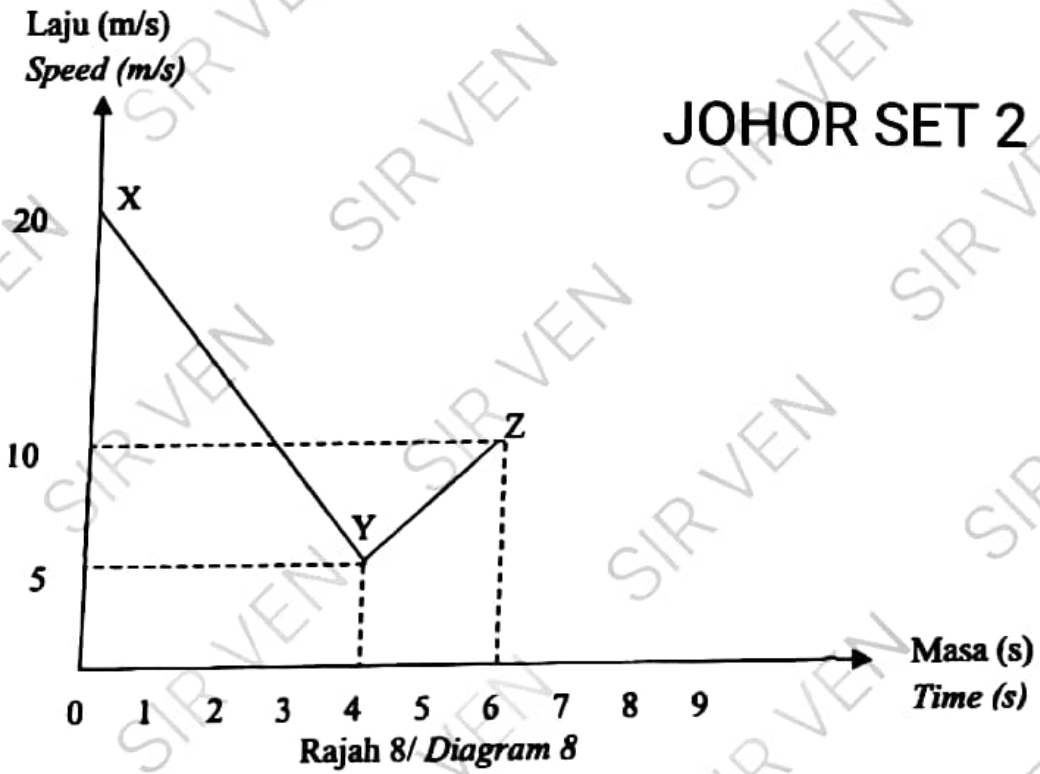
$$\frac{186}{18}$$

10.33

(b)Motorsikal bergerak dengan laju seragam $10ms^{-1}$

Scanned with CamScanner

Rajah 8 menunjukkan graf laju-masa bagi sebuah zarah yang bergerak dari stesen X ke Stesen Z.
Diagram 8 shows the speed-time graph for a particle moving from Station X to Station Z.



Rajah 8/ *Diagram 8*

JOHOR SET 2

Hitung */calculate*

(a) Laju purata dalam ms^{-1} perjalanan zarah itu dari stesen X ke stesen Z.
The average speed in ms^{-1} of travel of the particle from station X to station Z.

(b) Perihalkan pergerakan zarah semasa ia bergerak dari stesen Y ke stesen Z.
Describe the movement of a particle as it moves from station Y to station Z.

[4 markah/4 *marks*]

Scanned with CamScanner

(a) $\left(\frac{1}{2}(5+20)x4 + \frac{1}{2}(5+10)x2 \right) / 6$

$= \frac{65}{6}$

$= 10.833$ m/s

(b) $\frac{10-5}{6-4} = 2.5\ ms^{-2}$

Zarah mengalami pecutan dengan kadar $2.5\ ms^{-2}$ dalam tempoh 2 saat

Scanned with CamScanner

Rajah 7 menunjukkan graf laju-masa bagi satu zarah dalam tempoh 60 saat.
Diagram 7 shows the speed-time graph of a particle for a period of 60 seconds.

Rajah / *Diagram 7*

SABAH SET 1

Cari
Find

(a) nilai k, jika jarak yang dilalui oleh zarah itu dengan laju seragam ialah 360 m.
the value of k, if the distance travelled by the particle at a uniform speed is 360 m.

[3 markah/*marks*]

(b) kadar perubahan laju, dalam ms^{-2}, bagi zarah itu dalam tempoh 20 saat yang pertama.
the rate of change of speed, in ms^{-2}, of the particle for the first 20 seconds.

[2 markah/*marks*]

(c) laju purata, dalam ms^{-1}, zarah itu dalam tempoh 60 saat.
the average speed, in ms^{-1}, of the particle for the period of 60 seconds.

[4 markah/*marks*]

Jawapan / *Answer* :

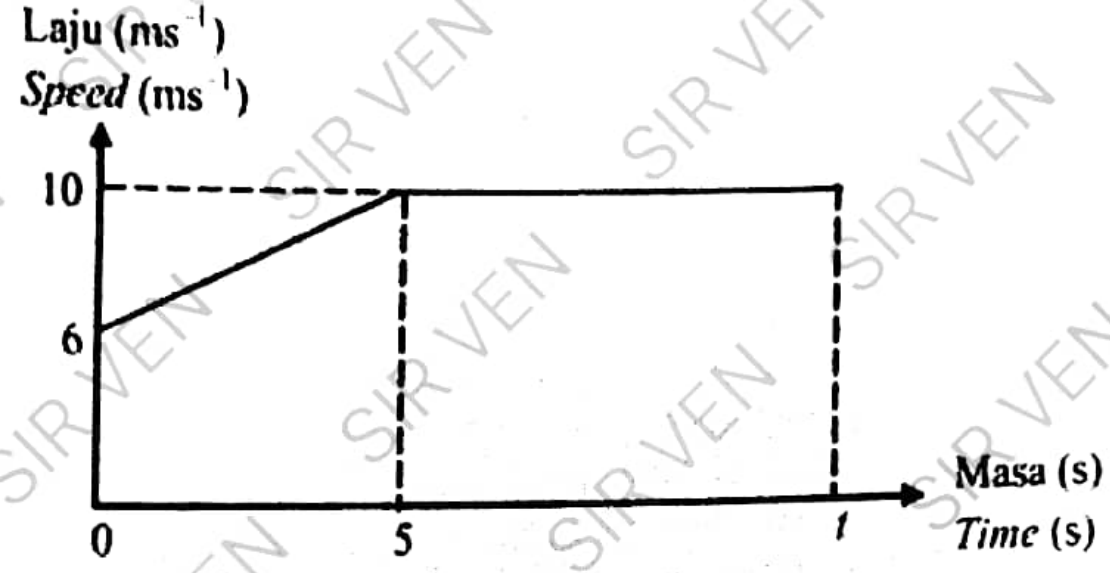
Scanned with CamScanner

(a)	$(40 - 20)(k) = 360$ $k = \frac{360}{20} = 18$
(b)	Kadar perubahan laju dalam 20 saat pertama

Scanned with CamScanner

Graf laju-masa dalam Rajah 7 menunjukkan gerakan suatu objek untuk tempoh t saat.

The speed-time graph in Diagram 7 shows the motion of an object for a period of t seconds.



Rajah 7
Diagram 7

SELANGOR SET 1

(*a*) Hitung
Calculate

(i) laju seragam,
uniform speed,

(ii) kadar perubahan laju, dalam ms^{-2}, objek itu pada 5 saat pertama.
the rate of change of speed, in ms^{-2}, *of the object in the first 5 seconds.*

[3 *markah*]
[3 *marks*]

(*b*) Cari nilai t, jika jarak yang dilalui oleh objek pada 5 saat pertama ialah separuh daripada jarak yang dilalui pada kelajuan seragam.
Find the value of t, if the distance travelled by the object for the first 5 seconds is half of the distance travelled at uniform speed.

[3 *markah*]
[3 *marks*]

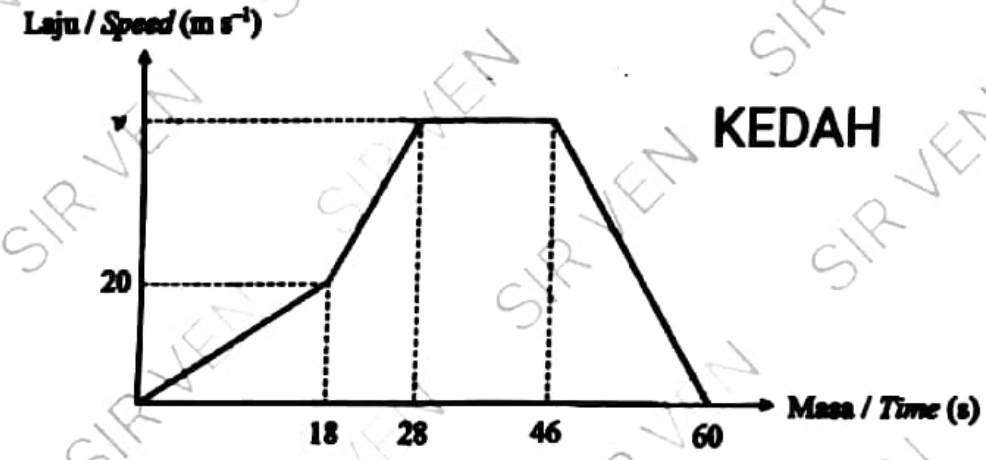
Scanned with CamScanner

2 (a)	(i) 10 (ii) $\frac{10-6}{5-0}$ *or equivalent* $\frac{4}{5}$ *or equivalent* Note: 1. Accept correct answer without working for 2 marks.
(b)	$\frac{1}{2}\times(6+10)\times 5$ *or equivalent* $\frac{1}{2}\times(t-5)\times 10$ *or equivalent* $\frac{1}{2}\times(6+10)\times 5=\frac{1}{2}\times(t-5)\times 10$ *or equivalent* 13

Scanned with CamScanner

(*b*) Suatu zarah lain iaitu zarah *Q* telah dipecutkan di bawah suatu garisan lurus. Laju zarah *Q* terhadap masa dalam tempoh 60 saat ujian tersebut direkodkan di dalam graf laju-masa seperti dalam Rajah 17(*a*) di bawah.

Another particle, which is a particle Q was accelerated under a straight line. The speed of the particle Q over time within 60 seconds of the test is recorded in the speed-time graph as in Diagram 17(b) below.



Rajah / *Diagram* 17(*b*)

(i) Hitung kadar perubahan laju, dalam m s^{-2}, bagi zarah *Q* dalam 18 saat pertama.

Calculate the rate of change, in m s^{-2}, *of the particle Q in the first 18 seconds.*

(ii) Hitung nilai *v* jika jumlah jarak pergerakan zarah *Q* dalam tempoh 60 saat ialah sama dengan jumlah jarak pergerakan zarah *P* iaitu 1.72 km

Calculate the value of v if the total distance of the movement of the particle Q in the 60 seconds is the same as the movement of the particle P which is 1.72 km.

(iii) Huraikan pergerakan zarah *Q* dalam tempoh 14 saat terakhir ujian tersebut.

Describe the movement of the particle Q during the last 14 seconds of the test.

[7 markah / *marks*]

(*c*) Dalam ujian terakhir oleh pasukan saintis tersebut, suatu zarah *R* direkodkan bergerak di sepanjang suatu garis lurus melalui satu titik tetap *M* dengan halaju zarah itu, v m s^{-1} adalah diberikan oleh $v = 48 + 32t - 3t^2$, dengan keadaan t, dalam saat, ialah masa selepas melalui titik *M*.

Nyatakan nilai t di mana zarah *R* akan berhenti seketika.

In the last test by the team of the scientists, a particle R was recorded moving along a straight line through a fixed-point M with the velocity of the particle, v m s^{-1} *is given by* $v = 48 + 32t - 3t^2$, *with t in seconds, is the time after passing through the fixed-point M.*

State the value of t at which the particle R will pause for a while.

[4 markah / *marks*]

Scanned with CamScanner

(*b*) (i) $\frac{20-0}{18-0}$ atau setara

1.11 atau $\frac{10}{9}$ atau setara

(ii) $\frac{1}{2}\times 20\times 8+\frac{1}{2}\times(20+v)\times 10+18\times v+\frac{1}{2}\times v\times 14=1720$

Nota:

$\frac{1}{2}\times 20\times 8$ atau $\frac{1}{2}\times(20+v)\times 10$ atau $18\times v$ atau $\frac{1}{2}\times v\times 14$ atau setara

(1 markah)

48

(iii) $\frac{48-0}{46-60}$ atau $-\frac{24}{7}$ atau -3.43 atau setara

Zarah Q mengalami nyahpecutan pada kadar 3.43 ms^{-2} selama 14 saat.

(*c*) $0=48+32t-3t^2$ atau setara

$(t-12)(3t+4)=0$ atau setara

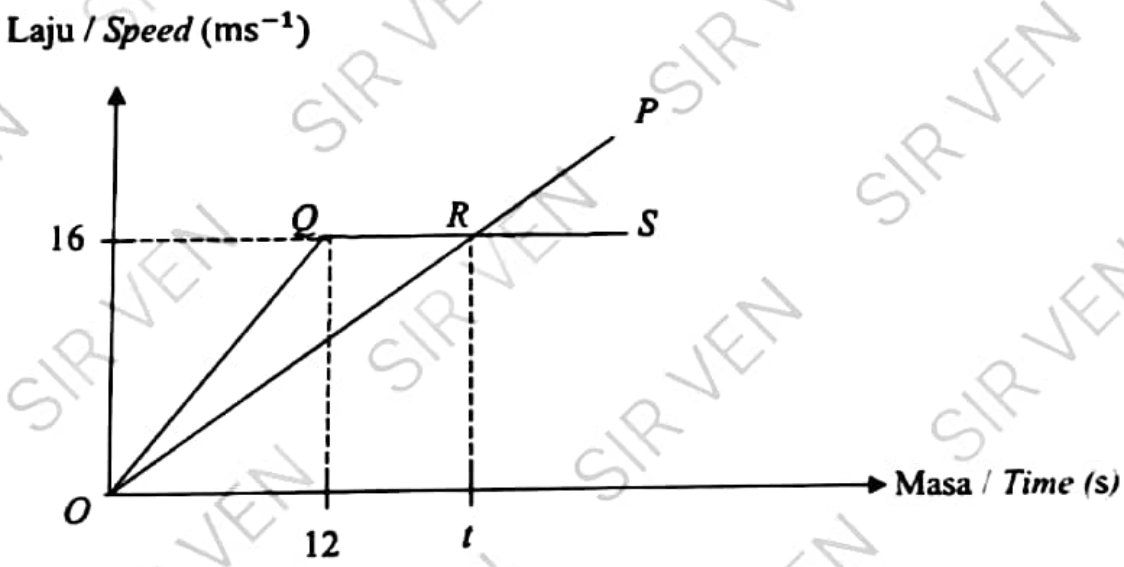
$t=12,\ t=-\frac{4}{3}$

$t=12$

Scanned with CamScanner

9. Dalam rajah 3 di bawah, graf *OP* mewakili Gerakan zarah *H* manakala graf *OQRS* mewakili zarah *K* dalam tempoh *t* saat.

In the diagram 3 below, the graph OP represents the motion of particle H while the graph OQRS represents the motion of particle K for a period of t seconds.



Rajah 3 / *Diagram* 3

(a) Nyatakan laju seragam, dalam ms^{-1}, bagi zarah *K*.

State the uniform speed, in ms^{-1}, *of the particle K.*

JOHOR SET 3

(b) Pada *t* saat, beza antara jarak yang dilalui oleh zarah *H* dan zarah *K* ialah 24 m. Hitung nilai *t*.

In t seconds, the difference in distance travelled between particle H and K is 24 m.

Calculate the value of t.

[4 markah / 4 *marks*]

Scanned with CamScanner

a) $16ms^{-1}$

b) $\frac{1}{2}(t-12+t)16$

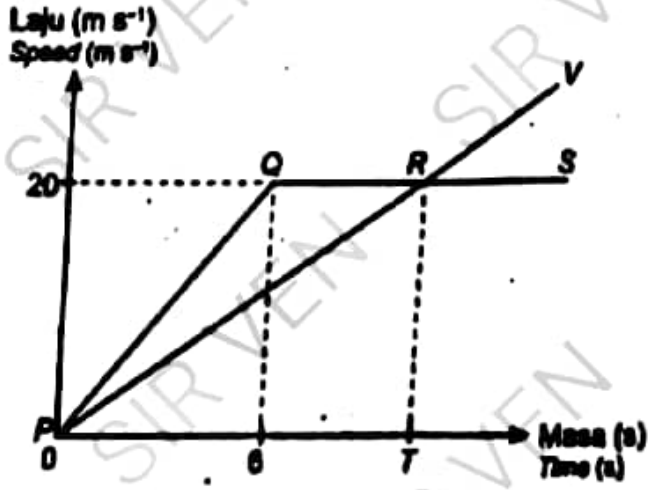
$$\frac{1}{2}(t-12+t)16 - \frac{1}{2}(16)t = 24$$

$$t = 15$$

Scanned with CamScanner

Rajah 4 menunjukkan graf laju-masa bagi pergerakan zarah A dan B, bagi tempoh masa T saat. Graf PQRS mewakili pergerakan zarah A dan graf PV mewakili pergerakan zarah B. Kedua-dua zarah bermula dari titik yang sama dan bergerak dilaluan yang sama.

Diagram 4 shows a speed-time graph for the movement of particle A and B, for a period of T-seconds. The PQRS graph represents the movement of particles A and PV graphs representing the movement of particle B. Both particles start from the same point and move along the same route.



Rajah 4 / *Diagram 4*

SABAH SET 5

(a) Nyatakan laju seragam, dalam ms^{-1}, bagi zarah A.
State the uniform speed, in ms^{-1}, of the particle A.

(b) Hitung kadar perubahan laju, dalam ms^{-2}, zarah A bagi 6 saat pertama.
Calculate the rate of change of speed, in ms^{-2}, of particle A for the first 6 seconds.

(c) Pada T saat, perbezaan jarak yang dilalui antara zarah A dan zarah B ialah 30 m. Cari nilai T.
At T seconds, the difference between the distance travelled by particle A and particle B is 30 m. Find the value of T.

[5 markah / 5 *marks*]

Scanned with CamScanner

(a)

Uniform speed

$= 20\ ms^{-1}$

(b) Rate of change of speed

$$= \frac{(20 - 0)ms^{-1}}{6s}$$

$$= \frac{(20)ms^{-1}}{(6 - 0)s}$$

$$= 3.33\ ms^{-2}$$

(c)

$$= \frac{1}{2}(6)(20) + (T - 6)(20) - \frac{1}{2}(T)(20) = 30$$

$$60 + 20T - 120 - 10T = 30$$

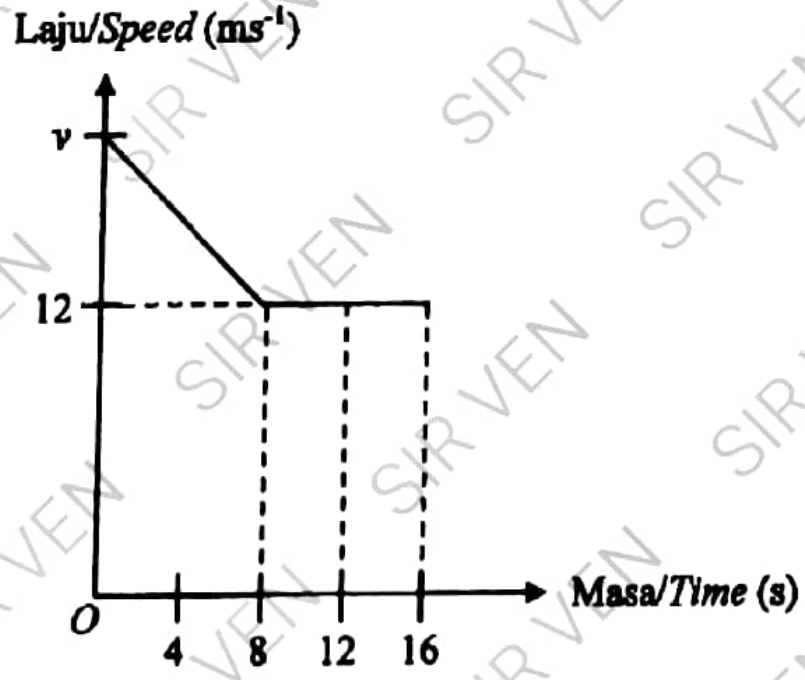
$$10T = 90$$

$$T = 9 \text{ seconds}$$

Scanned with CamScanner

4 menunjukkan graf laju-masa bagi pergerakan kereta Encik Khair dalam oh 16 saat.

Diagram 4 shows the speed-time graph for the movement of Encik Khair's car for a period of 16 seconds.



Rajah 4
Diagram 4

(a) Nyatakan tempoh masa, dalam saat, kereta itu bergerak dengan laju seragam.
State the duration of time, in second, at uniform speed.

(b) Hitung,
Calculate,

TERENGGANU (MPP2)

(i) jarak dalam meter, yang dilalui semasa kereta bergerak dengan laju seragam.
distance in meters, where are passed while the car moves at a uniform speed.

(ii) nilai *v*, jika laju purata kereta untuk 12 saat yang pertama ialah 14 ms^{-1}.
value of v, if the average speed of the car for the first 12 seconds is 14 ms^{-1}.

(c) Huraikan pergerakan kereta bagi keseluruhan perjalanan.
Describe the movement of the car for the whole journey.

[9 markah / 9 *marks*]

Scanned with CamScanner

9 (a) 8

(b) (i) 8×12

96

(ii) $\left(\frac{1}{2}\right)(12+v)\times(8)$ atau 4×12 atau setara / *or equivalent*

$$\frac{\left(\frac{1}{2}(12+v)\times8\right)+(4\times12)}{12}=14 \text{ atau setara / } or \text{ } equivalent$$

18

(c) Kereta bergerak sejauh 216 m dengan laju purata 13.5 ms^{-1} dalam tempoh 16 saat

The car travels along 216 m *with an average speed of* 13.5 ms^{-1} *in* 16 *seconds*

Scanned with CamScanner

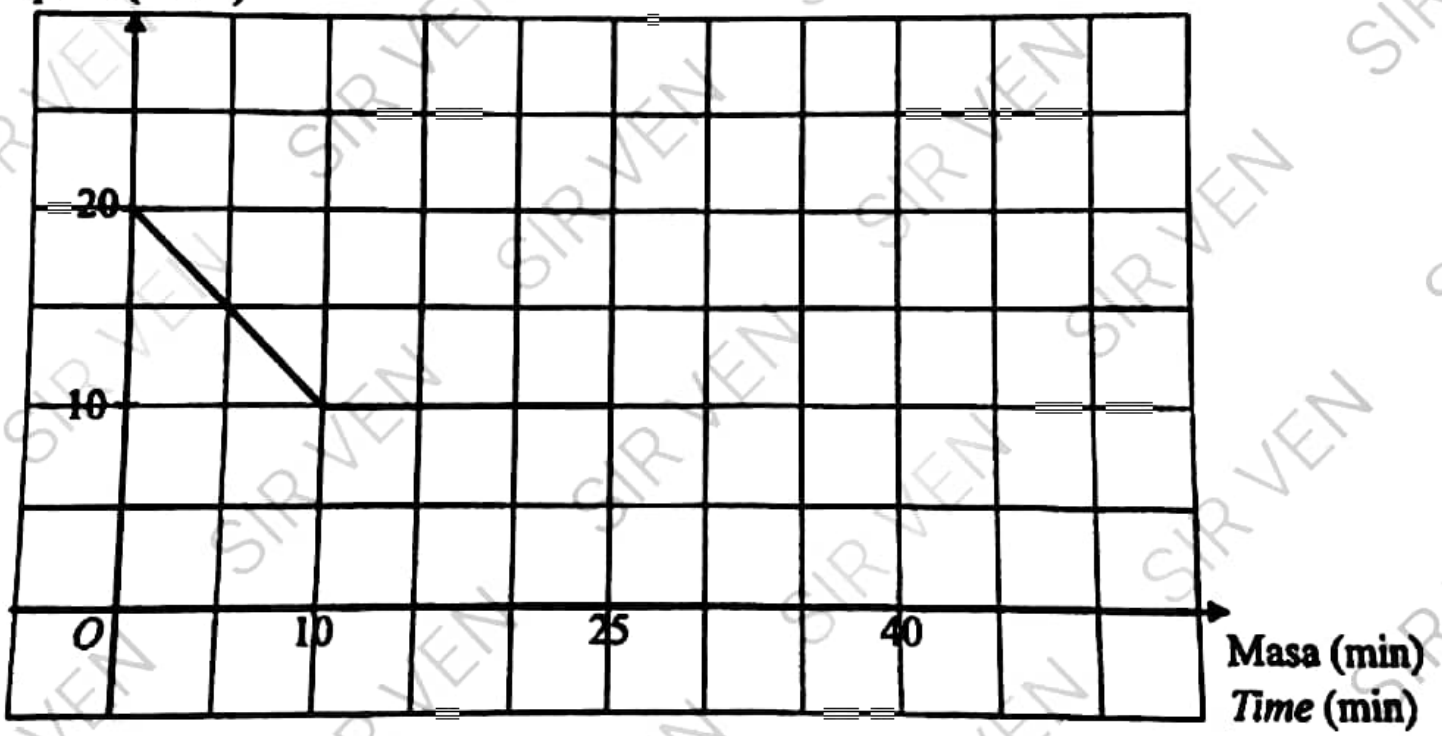
Graf laju-masa menunjukkan gerakan bagi sebuah bot. Selepas berlayar selama 25 minit, bot tersebut mengalami masalah dan nyahpecutan secara seragam dan berhenti bergerak selepas 15 minit. Pada graf yang sama, lukis satu garisan bagi melengkapkan gerakan bot tersebut dan seterusnya hitung jumlah jarak, dalam meter, yang dilalui sehingga bot berhenti.

The speed-time graph shows the motion of a boat. After 25 minutes of moving, the boat encountered difficulty and decelerate uniformly and eventually stop moving after 15 minutes. On the same graph, draw a line to complete the motion of the boat and hence calculate the total distance, in metres, travelled by the boat until it stops.

[4 marks]
[4 *markah*]

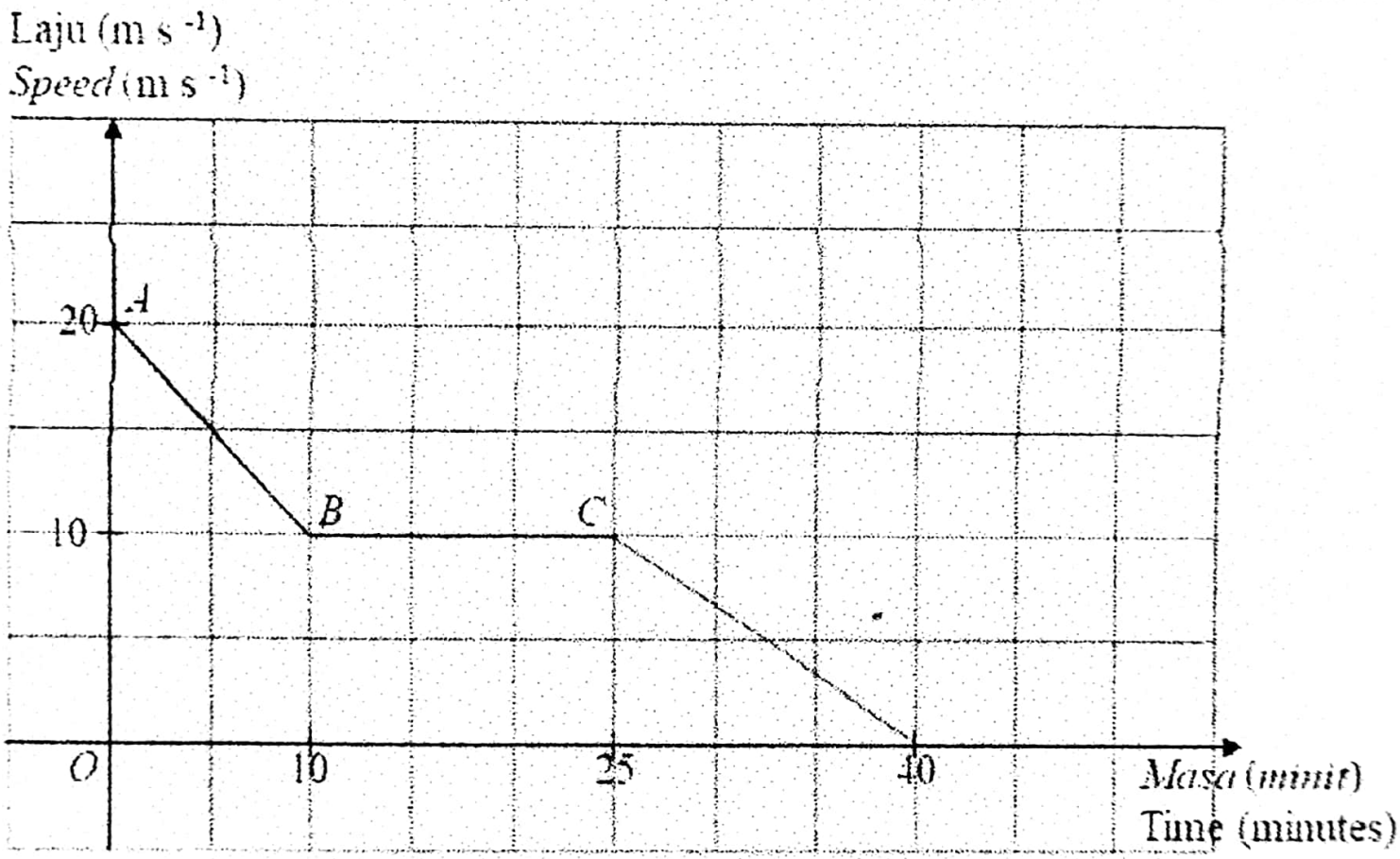
Jawapan / *Answer* :

NEGERI SEMBILAN



Rajah 4
***Diagram* 4**

Scanned with CamScanner



Garisan yang betul dilukis dari titik (25, 10) hingga (40, 0).

$\frac{1}{2} \times (20 + 10) \times 10$ or $\frac{1}{2} \times (15 + 30) \times 10$ atau setara

$\frac{1}{2} \times (20 + 10) \times 10 + \frac{1}{2} \times (15 + 30) \times 10$ atau setara

375

Scanned with CamScanner

. Jadual 2 menunjukkan laju dan masa bagi satu zarah dalam tempoh 12 saat.

Table 2 shows the speed and time of a particle in 10 seconds.

Laju (ms^{-1}) *Speed* (ms^{-1})	0	15	15	30
Masa (s) *Time* (s)	0	2	6	10

Jadual 2 / *Table 2*

(a) Berdasarkan Jadual 2, lukis graf laju-masa pada rajah di ruang jawapan.

Based on Table 2, draw the speed-time graph in figure in the answer space.

[2 markah/*marks*]

KELANTAN

(b) Berdasarkan graf yang dilukis pada rajah di ruang jawapan, nyatakan :

Based on the graph drawn in Figure in the answer space, state :

(i) Laju seragam, dalam ms^{-1}, zarah itu [1 markah/*marks*]

Uniform speed, in ms^{-1}, of the particle

(ii) Tempoh masa dalam saat, zarah bergerak dalam laju seragam [1 markah/*marks*]

The duration of time, in second, the particle moves in uniform speed.

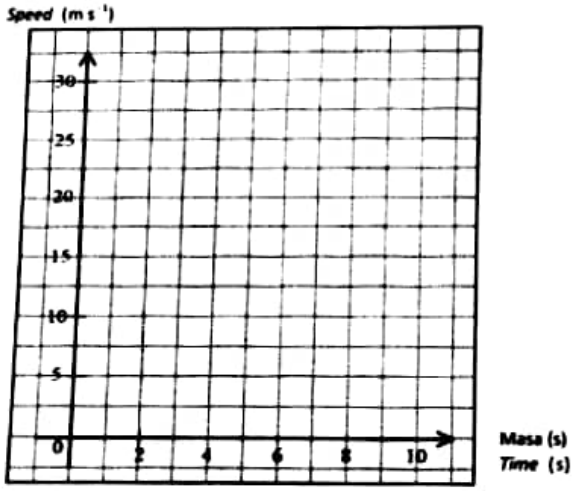
(c) hitung kadar perubahan laju dalam ms^{-2}, dalam tempoh 4 saat terakhir.

Calculate the rate of change of speed, in ms^{-2}, for the last 4 second. [2 markah/*marks*]

(d) Hitung purata laju, dalam ms^{-1} bagi zarah itu dalam 10 saat.

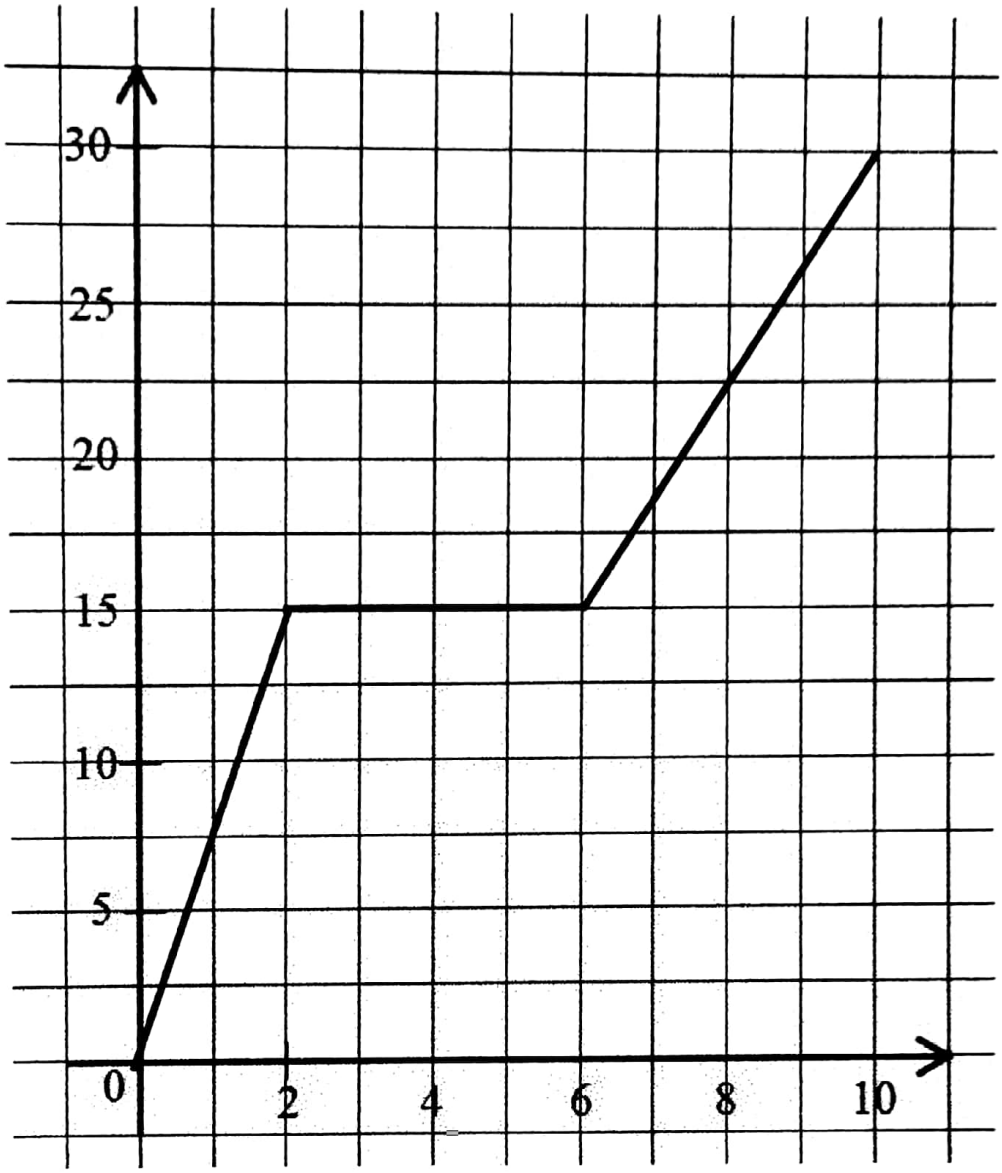
Calculate the average speed, in ms^{-1}, of the particle in period of 10 second

[3 markah/*marks*]



Scanned with CamScanner

a)



b) i- 15

ii- 4 saat

c) $\frac{30-15}{10-6}$

$\frac{15}{4}$

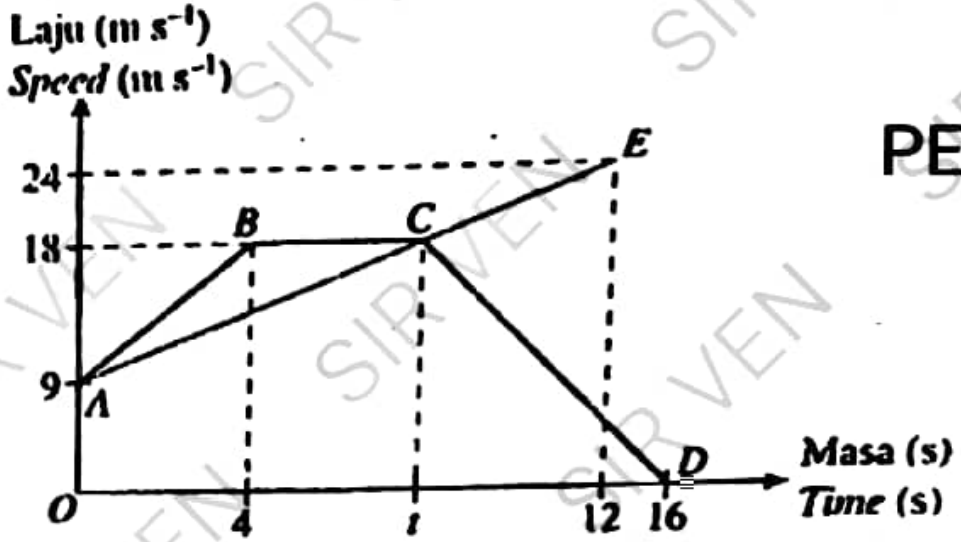
d) $\frac{\frac{1}{2}(2)(15)+4(15)+\frac{1}{2}(15+30)\times 4}{10}$

$= 16.5$

Scanned with CamScanner

Rajah 7 menunjukkan graf laju-masa bagi pergerakan dua zarah, P dan Q, masing-masing dalam tempoh 12 saat dan 16 saat. Graf ACE mewakili pergerakan P dan graf $ABCD$ mewakili pergerakan Q. Kedua-dua zarah itu bermula pada titik yang sama dan melalui laluan yang sama.

Diagram 7 shows the speed-time graph for the movement of two particles, P and Q, for a period of 12 seconds and 16 seconds respectively. The graph ACE represents the movement of P and the graph ABCD represents the movement of Q. Both particles start at the same point and move along the same route.



Rajah 7 / *Diagram 7*

Diberi bahawa jarak yang dilalui oleh zarah Q adalah 27 meter lebih daripada jarak yang dilalui oleh zarah P apabila kedua-dua zarah itu mencapai laju yang sama pada t saat.
Hitung nilai t.

It is given that the distance travelled by particle Q is 27 metre more than the distance travelled by particle P when both particles reached the same speed at t seconds.
Calculate the value of t.

[3 markah / *marks*]

PERAK
SIR VEN
Scanned with CamScanner

$\frac{1}{2}(9+18)\times 4+(t-4)\times 18$ *or* $\frac{1}{2}(9+18)\times t$

$\frac{1}{2}(9+18)\times 4+(t-4)\times 18 - \frac{1}{2}(9+18)\times t = 27$

$t = 10$ seconds

Scanned with CamScanner

Rajah di ruang jawapan menunjukkan graf laju-masa yang tidak lengkap bagi pergerakan basikal Khairil dalam tempoh 2 minit terakhir pusingan pertama latihan. Diberi bahawa basikal itu bergerak dengan laju seragam 8 m s^{-1} dalam 42 saat yang pertama. Kemudian, Khairil meningkatkan kelajuan sehingga mencapai 14 m s^{-1} pada saat ke-70 dan seterusnya menyahpecut sehingga berhenti pada minit ke-2.

The diagram in the answer space shows the incomplete speed-time graph of Khairil's bicycle movement during the last 2 minutes of the first round of a training. Given that the bicycle moves at a uniform speed of 8 m s^{-1} in the first 42 seconds. Then, he increases the speed to 14 m s^{-1} till the 70th second and hence decelerates constantly until stop at the 2nd minute.

(i) Lengkapkan graf-laju masa di ruang jawapan berdasarkan maklumat yang diberikan.

Complete the speed-time graph in the answer space based on the information given.

SARAWAK SET 2

[2 markah / *marks*]

(ii) Daripada graf di (b)(i), hitung nyahpecutan, dalam m s^{-2}, basikal itu dalam tempoh 50 saat terakhir.

From the graph in (b)(i), calculate the deceleration, in m s^{-2} , of the bicycle in the last 50 seconds.

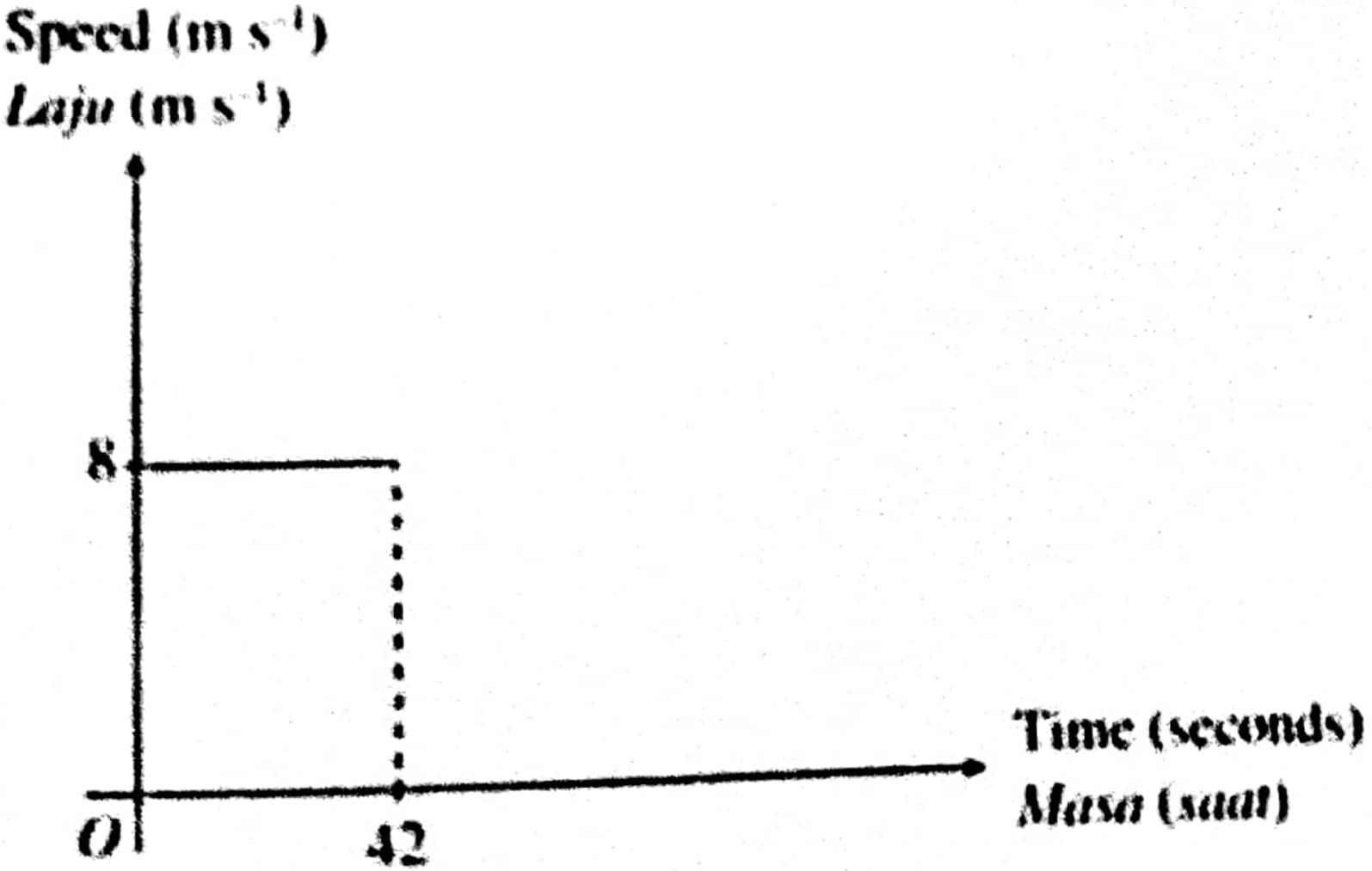
[2 markah / marks]

(iii) Hitung jumlah jarak, dalam m, yang dilalui dalam tempoh 2 minit itu.
Calculate the total distance, in m, travelled in the period of 2 minutes.

[3 markah / marks]

Scanned with CamScanner

(b) (i)



Scanned with CamScanner

Rajah di ruang jawapan menunjukkan graf laju-masa yang tidak lengkap bagi pergerakan basikal Khairil dalam tempoh 2 minit terakhir pusingan pertama latihan. Diberi bahawa basikal itu bergerak dengan laju seragam 8 m s^{-1} dalam 42 saat yang pertama. Kemudian, Khairil meningkatkan kelajuan sehingga mencapai 14 m s^{-1} pada saat ke-70 dan seterusnya menyahpecut sehingga berhenti pada minit ke-2.

The diagram in the answer space shows the incomplete speed-time graph of Khairil's bicycle movement during the last 2 minutes of the first round of a training. Given that the bicycle moves at a uniform speed of 8 m s^{-1} in the first 42 seconds. Then, he increases the speed to 14 m s^{-1} till the 70th second and hence decelerates constantly until stop at the 2nd minute.

(i) Lengkapkan graf-laju masa di ruang jawapan berdasarkan maklumat yang diberikan.

Complete the speed-time graph in the answer space based on the information given.

SARAWAK SET 2

[2 markah / *marks*]

(ii) Daripada graf di (b)(i), hitung nyahpecutan, dalam m s^{-2}, basikal itu dalam tempoh 50 saat terakhir.

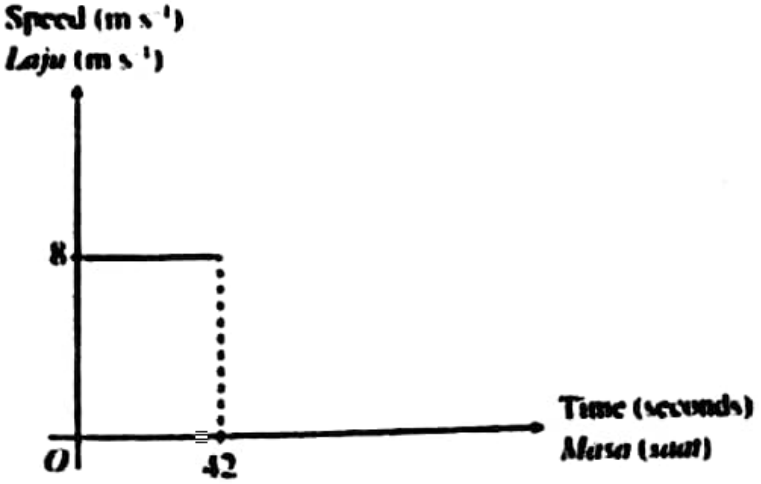
From the graph in (b)(i), calculate the deceleration, in m s^{-2}, of the bicycle in the last 50 seconds.

[2 markah / marks]

(iii) Hitung jumlah jarak, dalam m, yang dilalui dalam tempoh 2 minit itu.
Calculate the total distance, in m, travelled in the period of 2 minutes.

[3 markah / marks]

(b) (i)



Scanned with CamScanner

(a) (i) $2\times\frac{22}{7}\times7\times\frac{60}{360}$ @ $2\times\frac{22}{7}\times4\times\frac{120}{360}$

$(2\times\frac{22}{7}\times7\times\frac{60}{360})$ + 3 + $(2\times\frac{22}{7}\times4\times\frac{120}{360})$ + 4 + 7

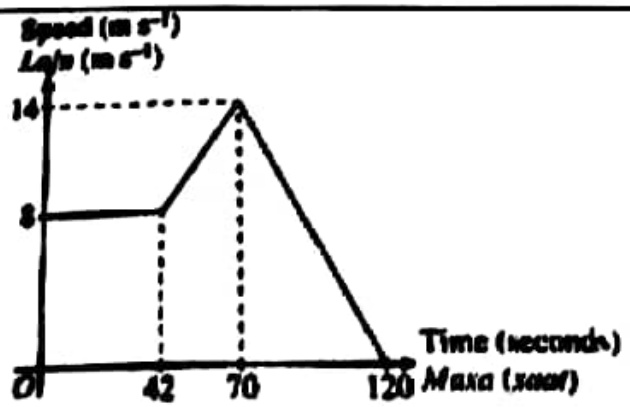
$29\frac{5}{7}$ @ 29.714

29.71

(ii) $\frac{65}{29.71}$

2.19 ≈ 3 pusingan lengkap

(b) (i)



(ii) $\frac{0-14}{120-70}$

-0.28 ms^{-2}

Nyahpecutan = 0.28 ms^{-2}

(iii) 8×42 @ $\left(\frac{1}{2}\times(8+4)\times28\right)$ @ $\left(\frac{1}{2}\times50\times14\right)$

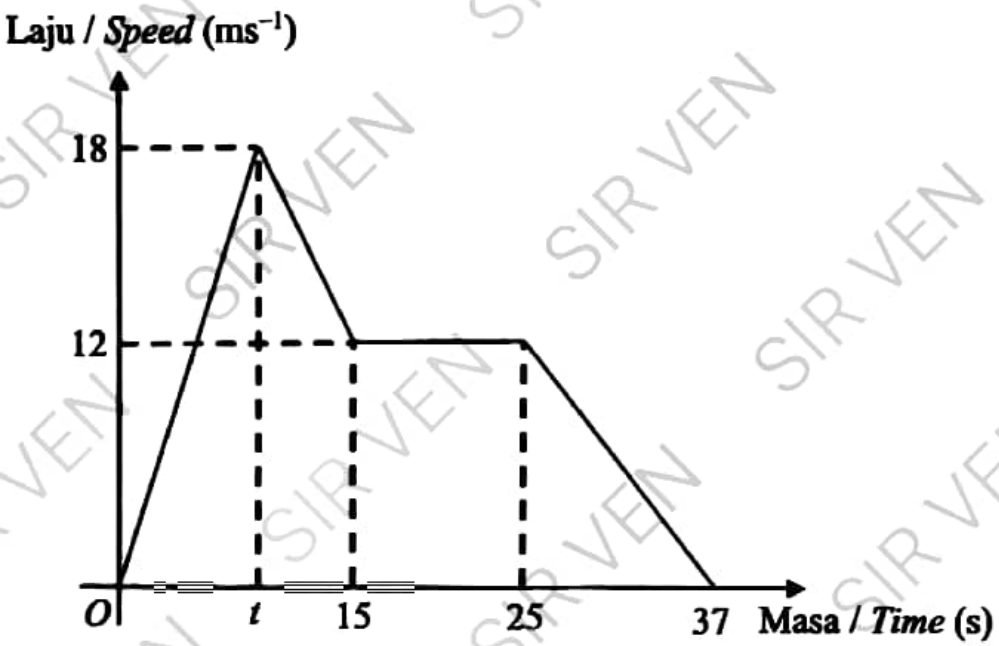
$(8 \times 42) + \left(\frac{1}{2}\times(8+4)\times28\right) + \left(\frac{1}{2}\times50\times14\right)$

994

Scanned with CamScanner

- Rajah 12 menunjukkan graf laju-masa bagi suatu zarah dalam tempoh 37 saat.

Diagram 12 *shows a speed-time graph of a particle for a period of* 37 *seconds.*



Rajah / *Diagram* 12

(*a*) Berdasarkan graf laju-masa di atas, nyatakan,

Based on the speed-time graph above, determine,

(i) laju seragam, dalam ms^{-1}, zarah itu.

the uniform speed, in ms^{-1}, *of the particle.*

SABAH SET 4

(ii) tempoh masa, dalam s, zarah itu bergerak dengan laju seragam.

the duration of time, in s, the particle moves with uniform speed.

[2 markah / *marks*]

(*b*) Hitung nyahpecutan, dalam ms^{-2}, zarah itu dalam tempoh 12 saat yang terakhir.

Calculate the deceleration, in ms^{-2}, *of the particle for the last* 12 *seconds.*

[2 markah / *marks*]

(*c*) Hitung nilai *t*, jika jumlah jarak yang dilalui oleh zarah itu dalam 15 saat yang pertama ialah 165 m.

Calculate the value of t, if the total distance travelled by the particle in the first 15 *seconds is* 165 m.

[3 markah / *marks*]

(*d*) Huraikan pergerakan zarah itu dalam tempoh 22 saat terakhir.

Describe the motion of the particle within the last 22 *seconds.*

[2 markah / *marks*]

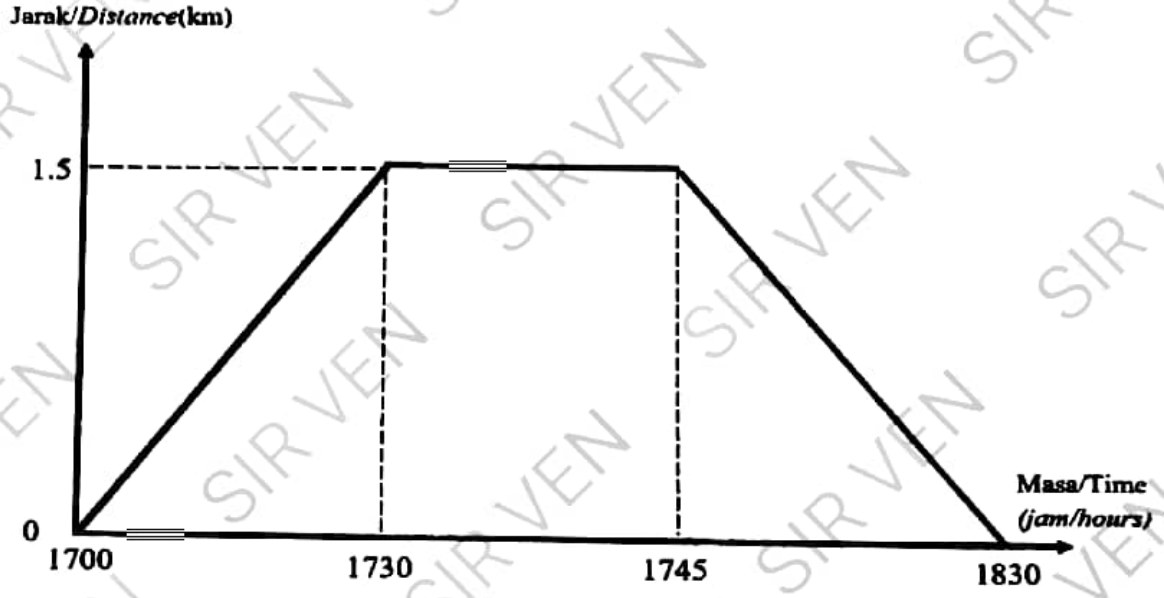
Scanned with CamScanner

(a)	(i)	12
	(ii)	$25 - 15 = 10$
(b)	nyah pecutan $= \frac{12 - 0}{25 - 37}$ nyah pecutan $= 1$	
(c)	$\frac{1}{2} \times t \times 18 + \frac{1}{2} \times (12 + 18) \times (15 - t) = 165$ $t = 10$	
(d)	Zarah itu bergerak dengan laju seragam pada kelajuan 12 ms^{-1} selama 10 saat. Kemudian, zarah itu mengurangkan kelajuannya pada kadar perubahan laju sebanyak 1 ms^{-2} selama 12 saat sehingga mencapai kelajuan 0 ms^{-1} (berhenti).	

Scanned with CamScanner

Encik Talib meluangkan masa berjoging pada hujung minggu dengan menggunakan kasut yang baru dibelinya untuk membakar kalori dalam tubuh. Rajah 17 menunjukkan pergerakan Encik Talib berjoging pada hujung minggu. Encik Talib akan berhenti sebentar apabila sampai di kawasan rehat sebelum pulang ke rumahnya semula.

Mr Talib spent time jogging over the weekend using shoes he had just bought to burn calories in the body. Diagram 17 shows Mr Talib jogging over the weekend. Mr Talib will stop for a while when he reaches the rest area before returning home.



Rajah 17/ Diagram 17

Berdasarkan Rajah 17 diatas ,
Based on diagram 17 above ,

JOHOR SET 1

(i) Nyatakan tempoh masa Encik Talib berada dikawasan rehat.
Specify the length of time Mr Talib was in the rest of the area.

[1 markah/1 *marks*]

(ii) Berapakah jarak keseluruhan perjalanan Encik Talib dari rumahnya ke kawasan rehat dan kemudian kembali ke rumahnya semula sewaktu berjogging.
What is the total distance Mr Talib's entire journey from his home to the rest area and then returned to his home again during the jog.

[1 markah/1 *marks*]

(iii)Seterusnya, hitung laju purata dalam kmj^{-1} keseluruhan perjalanan berjogging Encik Talib.
Hence, calculate the average speed in kmj^{-1}, the entire trip jogging Mr. Talib.

[2 markah/2 *marks*]

Scanned with CamScanner

i) 15 minit

$1.5 + 1.5 = 3$ km

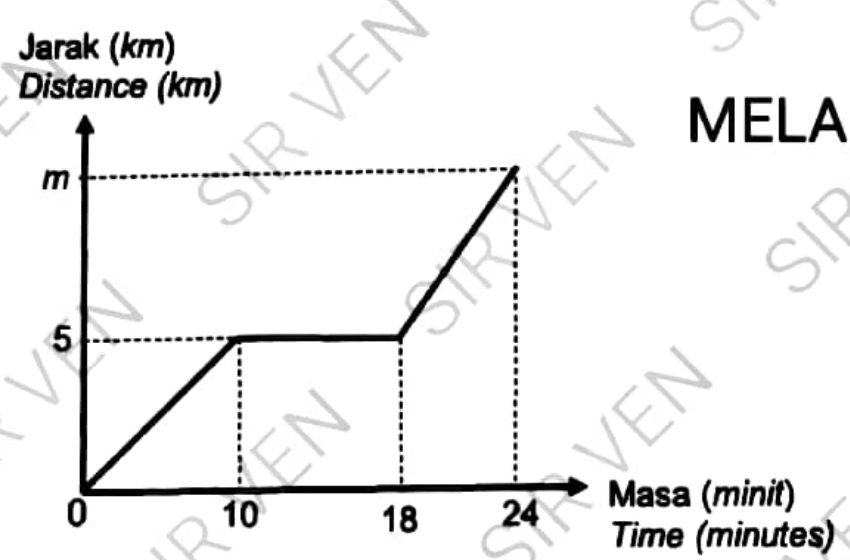
$$\text{Laju purata} = \frac{3}{1.5}$$

i) $= 2$ kmj^{-}

Scanned with CamScanner

(b) Setiap pagi, Adli akan memandu kereta ke Pasar Tani tempat dia berniaga nasi lemak. Graf jarak-masa dalam Rajah 11 menunjukkan pergerakan kereta Adli dari rumah ke Pasar Tani. Adli akan singgah sebentar di Taska Anakku untuk menghantar anaknya, sebelum meneruskan perjalanannya.

Every morning, Adli will drive his car to Pasar Tani, the place where he trades nasi lemak. The distance-time graph in Diagram 11 shows the motion of his car from his house to Pasar Tani. Adli will stop a while at Taska Anakku to send his child before continuing his journey.



MELAKA

Rajah 11 / *Diagram* 11

(i) Nyatakan tempoh masa, dalam minit, Adli berhenti di Taska Anakku.
State the duration of time, in minutes, *Adli stopped at Taska Anakku.*

[1 markah / *marks*]

(ii) Hitung laju, dalam km j^{-1}, kereta Adli dari rumah ke Taska Anakku.
Calculate the speed, in km h^{-1}, *of Adli's car from his house to Taska Anakku.*

[2 markah / *marks*]

(iii) Hitung nilai *m*, jika diberi laju purata keseluruhan perjalanan ialah 45 km j^{-1}.
Calculate the value of m, if given that average speed for the whole journey is 45 km h^{-1}.

[2 markah / marks]

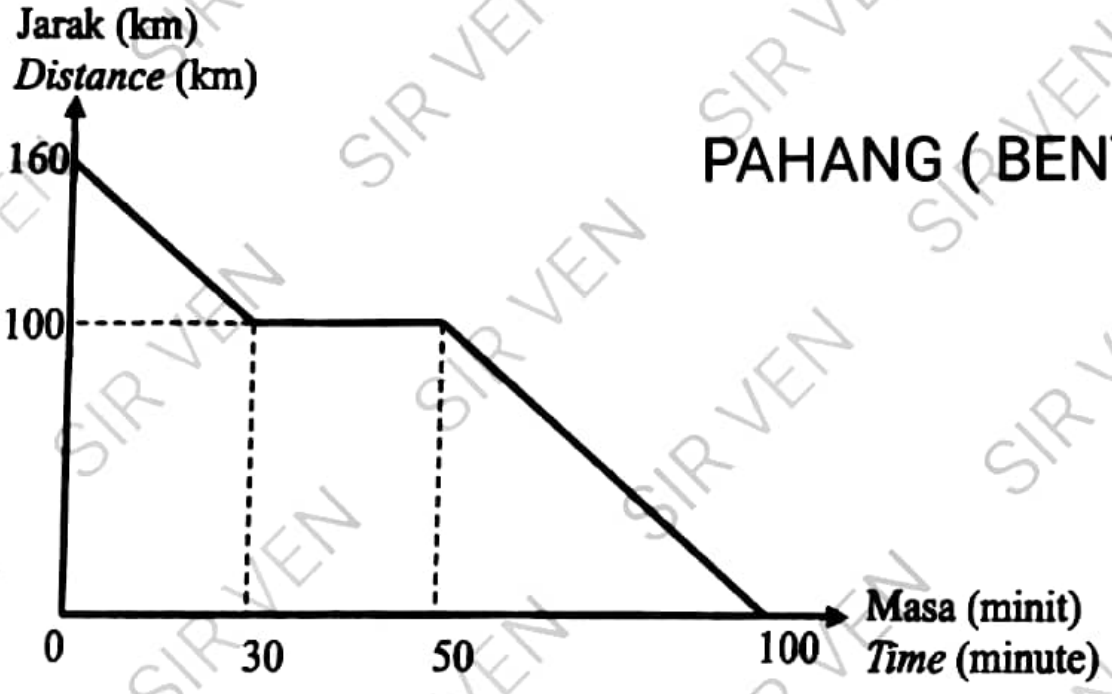
Scanned with CamScanner

(i)	8
(ii)	$\frac{5-0}{\left(\frac{10-0}{60}\right)}$ 30
(iii)	$45 \times \left(\frac{24}{60}\right)$ 18

Scanned with CamScanner

Rajah 6 menunjukkan graf jarak-masa bagi perjalanan sebuah kereta dari bandar *A* ke bandar *C* melalui bandar *B* dalam tempoh 100 minit.

Diagram 6 shows the distance-time graph for the journey of a car from town A to town C through town B in 100 minutes.



PAHANG (BENTONG)

Rajah 6 / *Diagram 6*

(a) (i) Nyatakan tempoh masa, dalam minit, ketika kereta itu berhenti.
State the duration of time, in minutes, during which the car is stationary.

(ii) Nyatakan jarak bandar *A* dari bandar *C*.
State the distance town A from town C.

(b) Hitung laju purata, dalam kmj^{-1}, bagi keseluruhan perjalanan.
Calculate the average speed, in kmj^{-1}, *of the whole journey.*

(c) Huraikan perjalanan kereta itu dalam 30 minit pertama.
Describe the motion of the car in the first 30 minutes.

[8 markah /*marks*]

Scanned with CamScanner

a) (i) 50-30
20

(ii) 160 km

b) $(\frac{\frac{160}{100}}{60})$
96 kmj^{-1}

c) Kereta itu bergerak dari bandar A ke bandar B dengan kelajuan 120kmj^{-1} dengan jarak 60km dalam masa 30 minit.

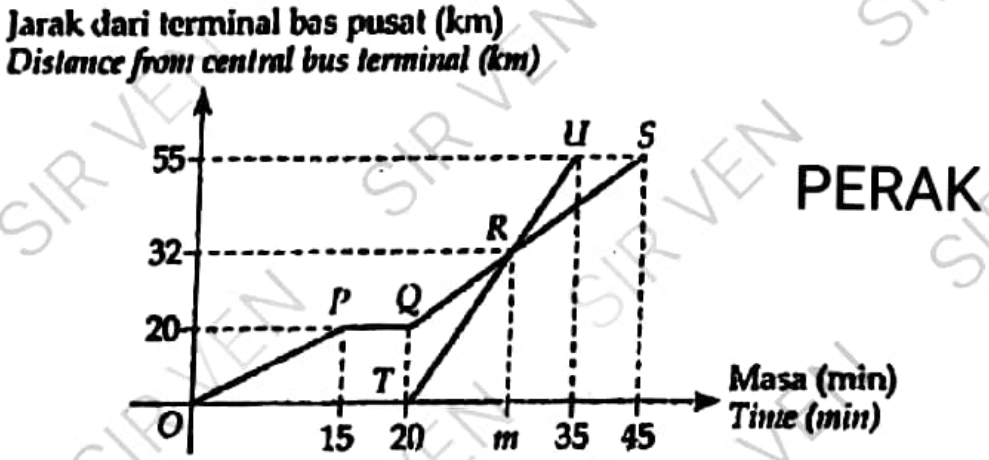
Notes :

1. Kereta bergerak dari A ke B (P1)
2. Kereta bergerak dengan laju 120kmj^{-1} (P1)
3. Kereta bergerak dengan jarak 60km dalam masa 30 minit (P1)
4. Mana-mana dua jawapan dilihat (P2)

Scanned with CamScanner

Graf jarak-masa dalam Rajah 17 menunjukkan perjalanan dua buah bas dari terminal bas pusat ke Stesen *Z* dengan menggunakan laluan yang sama. *OPQRS* mewakili perjalanan bas *A* manakala *TRU* mewakili perjalanan bas *B*. Bas *A* bertolak pada pukul 6:30 a.m. Dalam perjalanan, bas itu berhenti untuk mengambil beberapa penumpang. Bas *B* bertolak pada pukul 6:50 a.m. Kedua-dua bas bertemu di bandar *R* pada waktu *m*.

The distance-time graph in the Diagram 17 shows the journey of two buses from the central bus terminal to Station Z by using the same route. OPQRS represents the journey of bus A while TRU represents the journey of bus B. Bus A departs 6:30 a.m. During the journey, the bus stops to pick up some passengers. Bus B departs at 6.50 a.m. Both buses meet at town R at time m.



Rajah 17 / *Diagram 17*

a) (i) Nyatakan tempoh masa, dalam minit, bas *A* berhenti untuk mengambil penumpang.

State the duration, in minutes, bus A stops to pick up the passengers.

(ii) Hitung jarak, dalam km, yang dilalui oleh bas *A* apabila ia bertemu dengan bas *B* di bandar *R*.

Calculate the distance, in km, *travelled by bus A when it meets bus B at town R.*

(iii) Cari laju, dalam kmj^{-1}, bagi bas *A* selepas melalui bandar *R*. beri jawapan dalam 2 tempat perpuluhan.

Find the speed, in kmh^{-1}, *of bus A after passing through town R. Give the answer in 2 decimal places.*

[6 markah / *marks*]

Scanned with CamScanner

(i) 5 minutes

(ii) 32 km

(iii) $\frac{32 - 0}{m - 20} = \frac{55 - 0}{35 - 20}$

$m = 28.73$

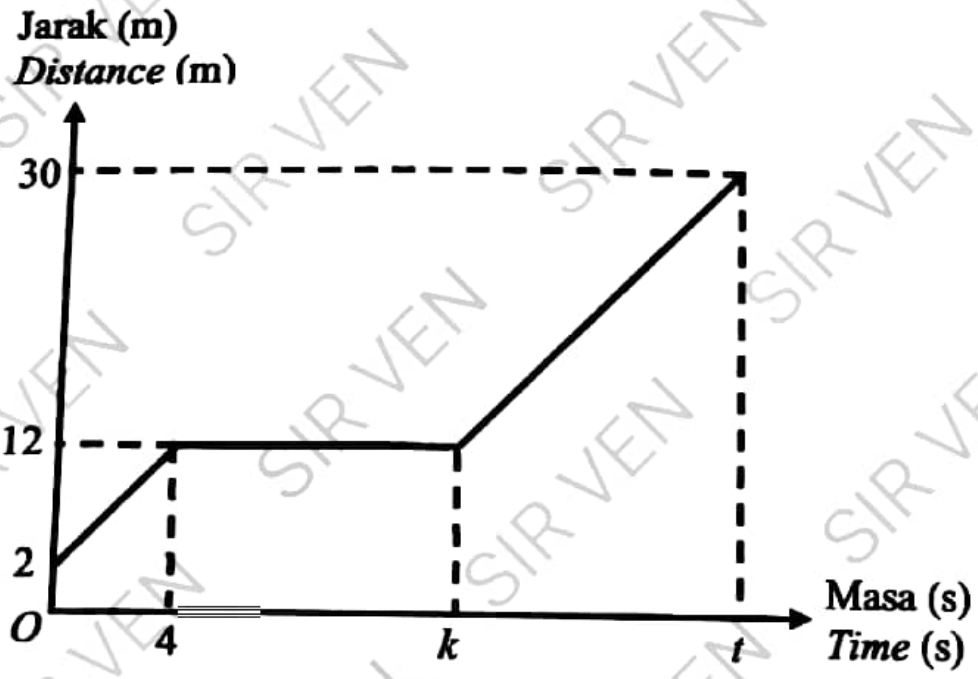
$$\frac{55 - 32}{\left(\frac{45 - 28.73}{60}\right)}$$

84.82 kmh^{-1}

Scanned with CamScanner

Rajah 4 menunjukkan graf jarak-masa bagi pergerakan suatu zarah dalam tempoh masa t saat.

Diagram 4 shows the distance-time graph for the movement of a particle for a period of t seconds.



Rajah 4
Diagram 4

(*a*) Diberi bahawa tempoh masa zarah itu berhenti ialah 5 s, cari nilai k.
Given that the duration of time the particle is stationary is 5 s, find the value of k.

(*b*) Hitung laju dalam ms^{-1}, zarah itu pada 4 saat pertama.
Calculate the speed, in ms^{-1}, of the particle in the first 4 seconds

(*c*) Diberi laju purata zarah itu bagi keseluruhan pergerakan ialah 1.4 ms^{-1}. Cari nilai t.
Given that the average speed of the particle for the whole journey is 1.4 ms^{-1} find the value of t.

TERENGGANU (MPP3)

[5 markah / 5 *marks*]

Scanned with CamScanner

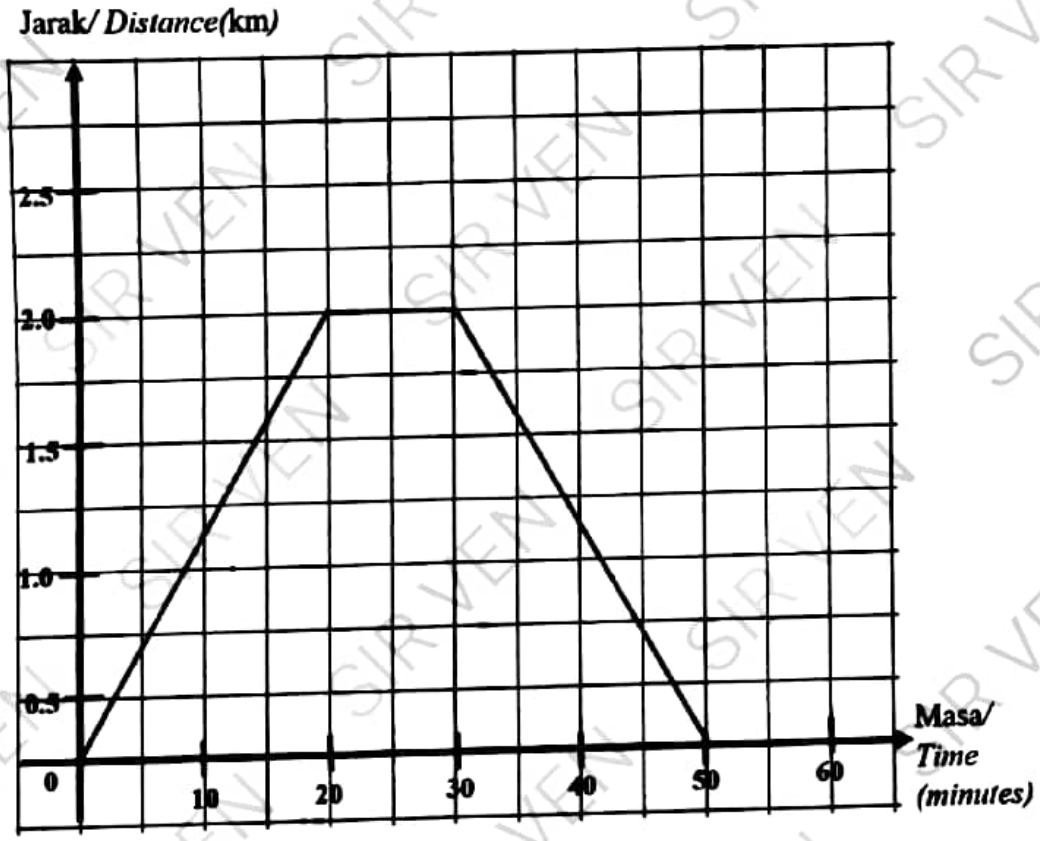
(a)	9
(b)	$\frac{12-2}{4}$ $\frac{5}{2}$ *or* 2.5
(c)	$1.4 = \frac{28}{t}$ 20

Scanned with CamScanner

Encik Harraz mengunakan kasut yang dibelinya untuk membuat latihan larian maraton mewakili jabatannya.Graf jarak -masa dalam rajah 17 menunjukkan jarak dan masa larian Encik Harraz dari rumahnya ke taman permainan dan balik ke rumahnya semula.

Mr. Harraz uses the shoes he bought to practice marathon running representing his department. The distance -time graph at the diagram 17 shows the distance and time of Mr. Harraz's run from his home to the playground and back to his home again.

JOHOR SET 2



Rajah 17/ *Diagram* 17

i) Nyatakan tempoh masa dalam saat Encik Harraz berhenti berehat di taman permainan.
State the duration of time in second Mr. Harraz stop resting at the playground.

[1 markah/1 *marks*]

ii) Hitung jarak perjalanan Encik Harraz pergi dan balik
Calculate the distance traveled by Mr. Harraz.

[1 markah/1 *marks*]

iii) Hitung laju purata dalam kmj^{-1} keseluruhan larian Encik Harraz.
Calculate the average speed in kmj^{-1} of Mr. Harraz's entire run.

[2 markah/2 *marks*]

Scanned with CamScanner

i) 10 minit

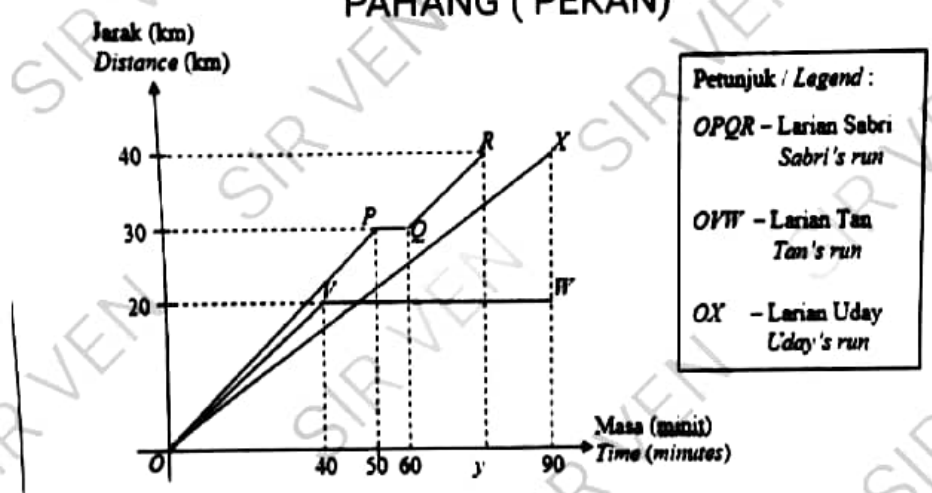
ii)4 km

iii) $\frac{4}{\frac{50}{60}} = 4.8\ kmj^{-1}$

Scanned with CamScanner

Rajah 4 menunjukkan graf jarak-masa bagi Sabri, Tan dan Uday dalam acara berbasikal 40 km.

Diagram 4 shows the distance-time graph of Sabri, Tan and Uday in a 40 km race.



Rajah / *Diagram 4*

(a) i. Siapakah yang tidak menghabiskan acara larian itu?

Who did not finish the race?

[2 markah/ *marks*]

ii. Siapakah yang memenangi acara larian itu?

Who won the race?

[2 markah/ *marks*]

(b) Hitung jarak, dalam km, penunggang basikal yang tidak menghabiskan perlumbaan itu dari garisan penamat apabila dia berhenti mengayuh basikal.

Calculate the distance, in km, of the cyclist who did not finish the race from the finishing line when he stopped cycling.

[1 markah/ *marks*]

(c) Hitung laju purata, dalam kmj^{-1}, bagi Uday.

Calculate the average speed, in kmh^{-1}, of Uday.

[2 markah/ *marks*]

(d) i. Sabri terjatuh semasa perlumbaan. Selepas itu, dia meneruskan perlumbaan sehingga ke garisan penamat. Nyatakan tempoh masa, dalam minit, sebelum Sabri meneruskan perlumbaan.

Sabri fell over during the race. After that, he continued his race till the finishing line. State the duration of time, in minutes, before Sabri continued his race.

[1 markah/ *marks*]

ii. Jika laju purata bagi Sabri ialah 32 km j^{-1}, cari nilai *y*.

If Sabri's average speed is 32 km h^{-1}, find the value of y.

[2 markah/ *marks*]

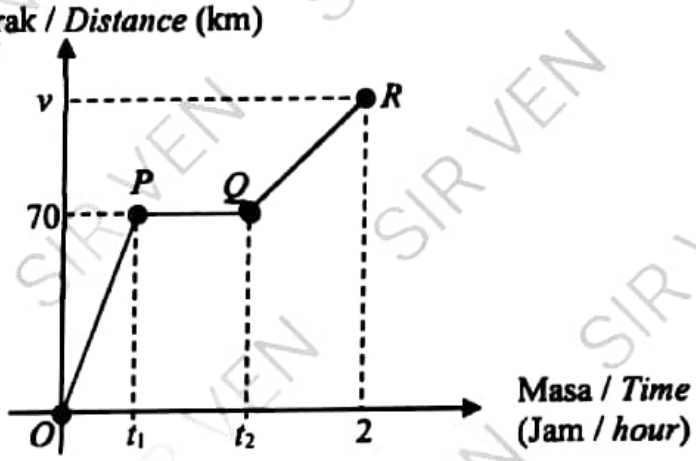
Scanned with CamScanner

12. (a)	i. Tan ii. Sabri
(b)	20 km
(c)	$\frac{40}{\left(\frac{90}{60}\right)}$ $26.67 \text{ @ } 26\frac{2}{3} jam$

Scanned with CamScanner

Rajah 12 menunjukkan graf jarak-masa perjalanan Habib sejauh v km.

Diagram 12 *shows the distance-time graph Habib for a distance of* v km.



Jadual / *Table* 12

(*a*) Diberi kadar perubahan jarak terhadap masa untuk 70 km yang pertama ialah 70 kmj^{-1} dan berada dalam keadaan pegun selama 30 minit.

It is given that the rate of change in distance for the first 70 km *is* 70 kmh^{-1} *and it is stationary for* 30 *minutes.*

Tentukan / *Determine*

(i) nilai / *the value of* t_1

(ii) nilai / *the value of* t_2

SABAH

(*b*) Perjalanannya diteruskan dari Q ke destinasi dengan laju purata 100 kmj^{-1}. Hitung nilai v.

His journey continues from Q *to the destination with an average speed of* 100 kmh^{-1}. *Calculate the value of* v.

(*c*) Jika perjalanan dari O dimulakan pada pukul 8:30 pagi, hitung waktu Habib sampai di destinasinya.

If the journey from O *starts at* 8:30 *in the morning, calculate the time Habib arrives at his destination.*

[9 markah / *marks*]

Scanned with CamScanner

(*b*) Natasya memandu keretanya sejauh 60 km dari rumahnya untuk melawat rakannya di hospital. Jadual 4.2 menunjukkan catatan perjalanannya.

Natasya drives her car for 60 km *from her house to visit her friend in hospital. Table* 4.2 *shows the note of her journey.*

Masa *Time*	26 Disember 2020 *26 December* 2020
8.00 a.m.	Memulakan perjalanan dari rumahnya. *Start journey from her house.*
8.20 a.m.	Berhenti di sebuah restoran untuk bersarapan setelah memandu sejauh 25 km. *Stop at a restaurant to have breakfast after driving for* 25 km.
8.40 a.m.	Meneruskan perjalanan untuk 35 km lagi. *Continue journey for another* 35 km.
9.20 a.m.	Tiba di hospital. *Arrive at the hospital.*

Jadual 4.2
Table 4.2

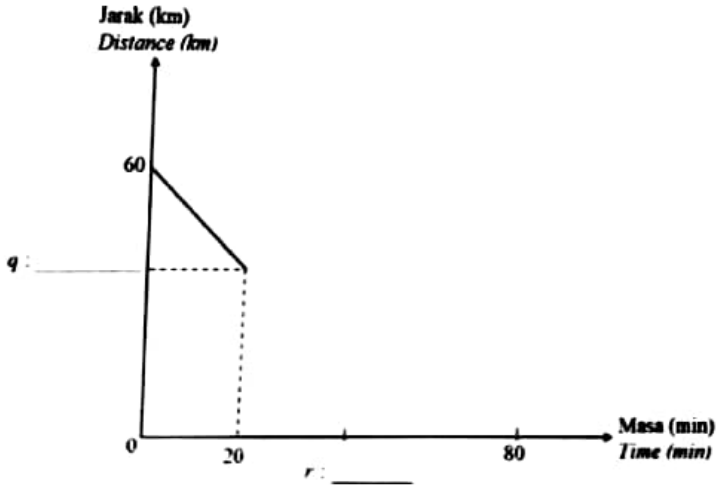
(i) Rajah 8 di ruang jawapan menunjukkan graf jarak-masa.
Diagram 8 *in the answer space shows a distance-time graph.*

(*a*) Nyatakan nilai *q* dan nilai *r*.
State the values of q and r.

(*b*) Lengkapkan graf untuk menggambarkan keseluruhan perjalanan Natasya.
Complete the graph to represent Natasya's whole journey.

(ii) Hitung laju purata keseluruhan perjalanan itu, dalam kmj^{-1}.
Calculate the average speed for the whole journey, in kmh^{-1}.

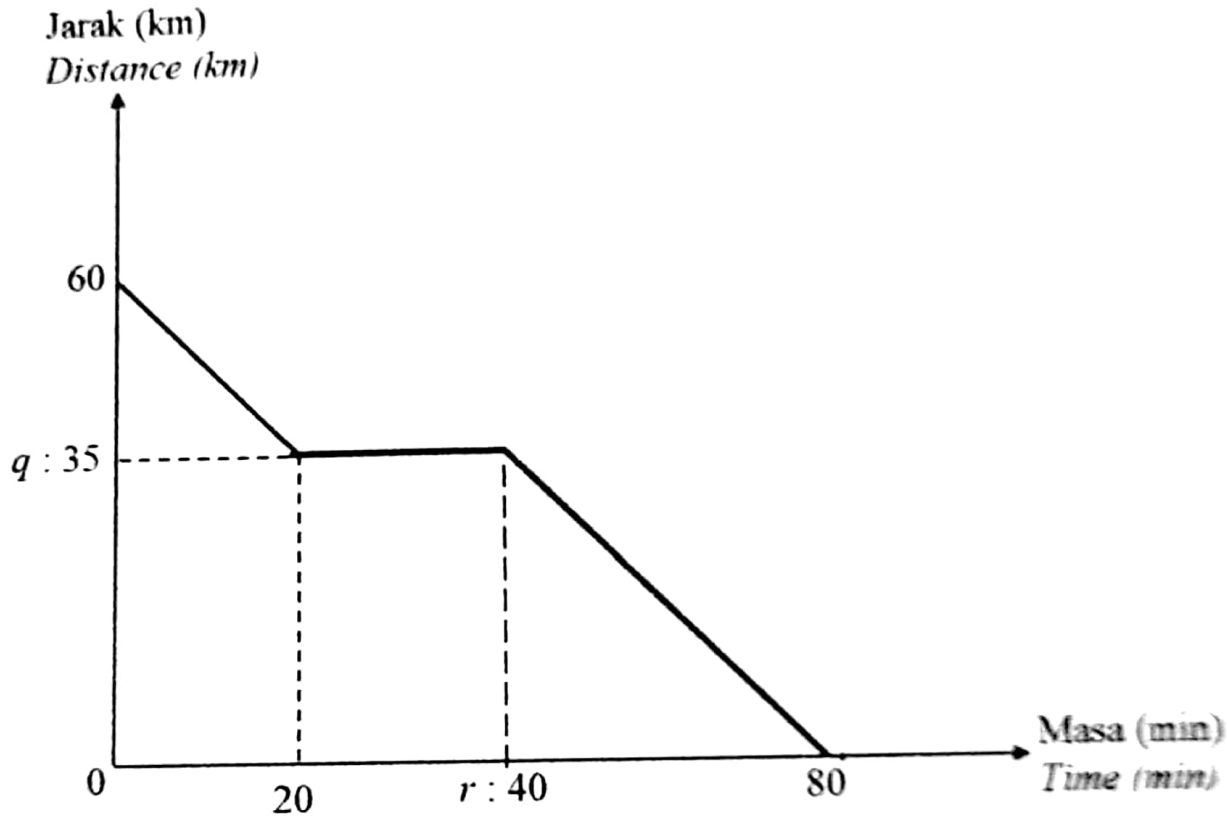
(*b*) (i) (*a*), (*b*) [6 markah]
[6 *marks*]



Rajah 8
Diagram 8

Scanned with CamScanner

(b) (i)



$q = 35$

$r = 40$

Graf lengkap dan betul

(ii) $\frac{60}{80}$ atau $\frac{60}{\left(\frac{80}{60}\right)}$

45

Scanned with CamScanner

Jarak di antara Pekan A dan pekan B ialah 26 km. Seorang penunggang basikal, Jamil meninggalkan pekan A pada jam 1300 dan mengayuh dengan kelajuan 16 km j^{-1} selama 1 jam 15 minit. Kemudian, dia berehat sehingga jam 1500 dan meneruskan perjalanannya dengan dengan kelajuan malar v km j^{-1} dan tiba di pekan B pada jam 1530.

The distance between Town A and town B is 26 km. A cyclist, Jamil leaves town A on 1300 hours and pedaling at a speed of 16 km h^{-1} for 1 hour 15 minutes. Then, he rested until 1500 o'clock and continued his journey at a constant speed v km j^{-1} and arrived in town B at 1530 hours.

SARAWAK (SET 1)

(a) Hitung nilai v.
Calculate the value of v.

[3 markah/*marks*]

(b) Hitung laju purata, dalam km j^{-1}, bagi keseluruhan perjalanan itu.
Calculate average speed, in km h^{-1}, for the whole journey.

[2 markah/*marks*]

(c)(i) Lengkapkan Rajah 15 pada ruang jawapan untuk mewakili keseluruhan perjalanan Jamil.

Complete the Diagram 15 in answer space to represent Jamil's whole jouney.

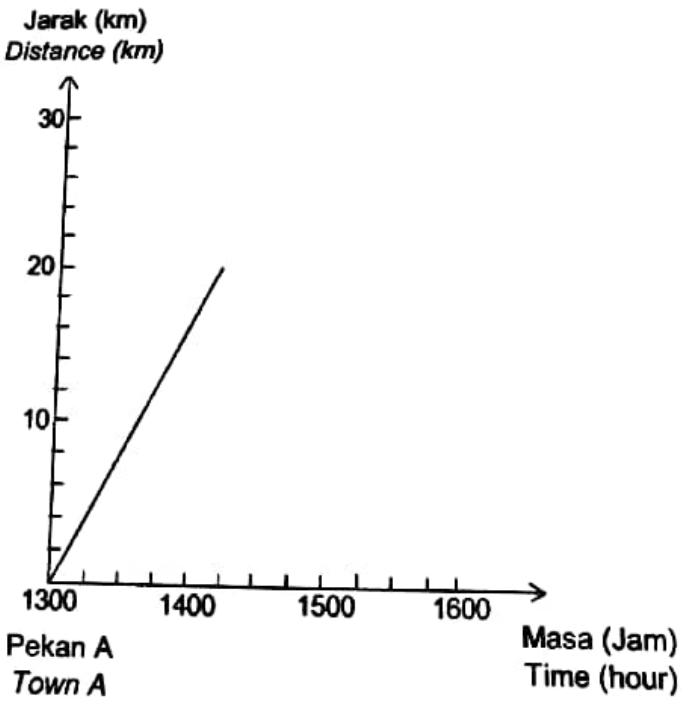
[2 markah/*marks*]

(ii) Sebuah lori meninggalkan pekan B pada jam 1430 dan bergerak ke pekan A dengan laju malar $17\frac{1}{3}$km j^{-1}.
Lukiskan graf jarak-masa yang mewakili perjalanan lori itu pada paksi-paksi yang sama.

A lorry leaves town B at 1430 hours and moves to town A at a constant speed of $17\frac{1}{3}$km h^{-1}.
Draw a distance-time graph representing the journey of the truck on the same axes.

[2 markah/*marks*]

(c)(ii)

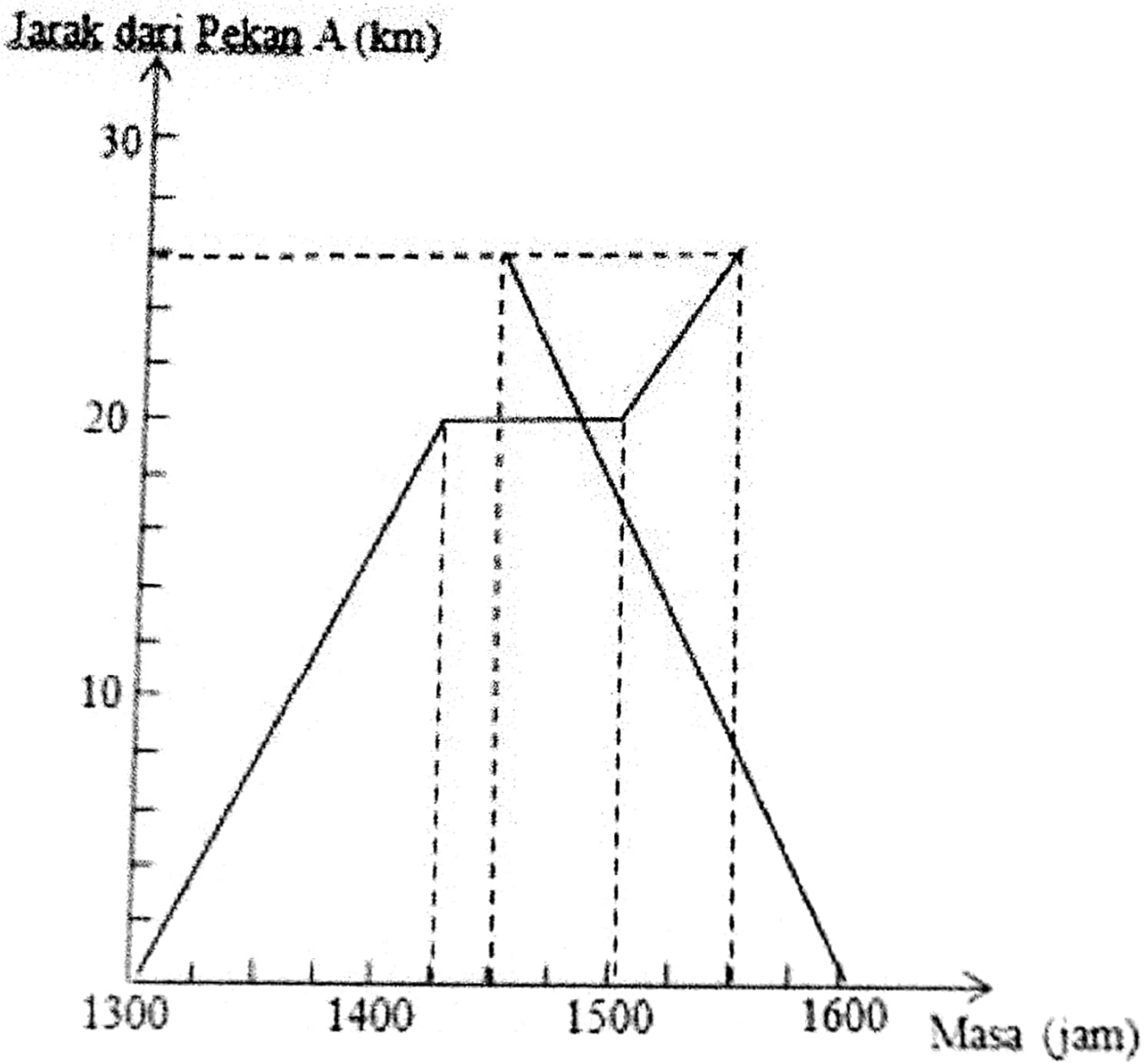


Rajah 15
Diagram 15

Scanned with CamScanner

15

(C) (i)(ii)

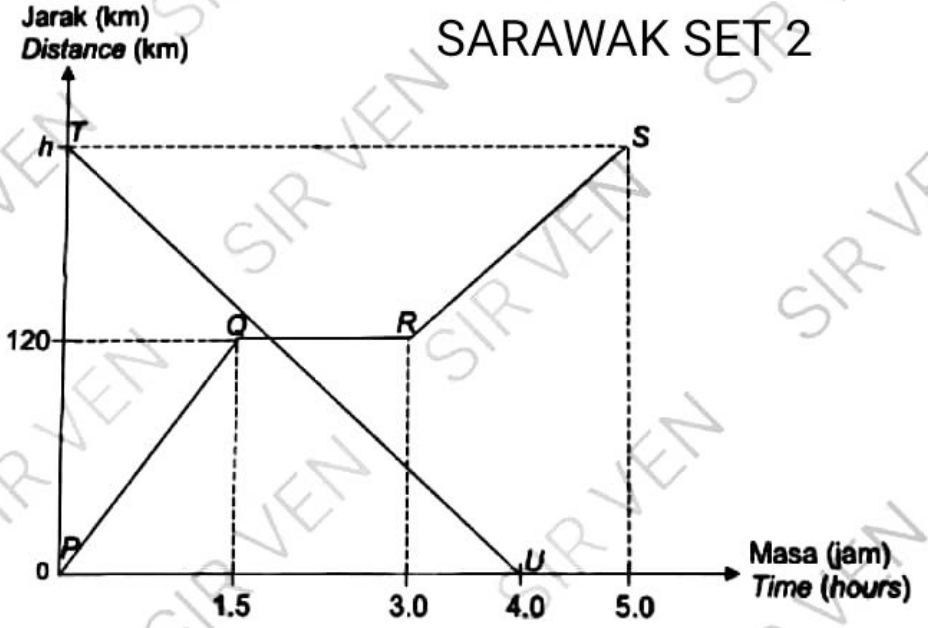


Scanned with CamScanner

SIR VEN

Rajah 11 menunjukkan graf jarak-masa bagi dua buah kereta yang masing-masing dipandu oleh Kumar dan Sinchan. Graf *PQRS* mewakili perjalanan kereta Kumar manakala graf *TU* mewakili perjalanan kereta Sinchan. Kereta Kumar bertolak dari Bandar *A* dan kereta Sinchan bertolak dari Bandar *B* pada waktu yang sama, iaitu pada jam 1130 dan melalui jalan yang sama.

***Diagram 11** shows the distance-time graph of two cars, each drove by Kumar and Sinchan. Graph PQRS represents the journey Kumar's car while graph TU represents the journey of Sinchan's car. Kumar's car leaves from Town A and Sinchan's car leaves from Town B at the same time, which is 1130 hours and travel along the same route.*



Rajah 11
Diagram 11

(a) (i) Nyatakan tempoh masa, dalam minit, kereta Kumar berada dalam keadaan rehat.

State the duration, in minutes, when Kumar's car in rest.

(ii) Diberi kadar perubahan jarak kereta Kumar bagi 2 jam terakhir ialah 90 km j^{-1}. Hitung nilai *h*.

Given the rate of change in distance of Kumar's car for the last 2 hours is 90 km j^{-1}. *Calculate the value of h.*

(iii) Hitung jarak, dalam km, dari bandar *B* ketika kedua-dua kenderaan itu bertemu.

Calculate the distance, in km, from town B when the two vehicles meet.

(iv) Pada pukul berapakah, dalam system 24 jam, kedua-dua kenderaan itu bertemu?
At what time, in 24-hours system, the two vehicles meet?

[7 markah / *marks*]

(b) Van *P* bergerak dengan laju yang sama dengan laju kereta Kumar bagi 1.5 jam yang pertama. Van *Q* bergerak dengan laju yang sama dengan laju kereta Sinchan.

Van P moves with a speed which is equal to the speed of Kumar's car for the first 1.5 hours. Van Q moves with a speed which is equal to the speed of Sinchan's car.

Van yang manakah bergerak dengan lebih cepat? Beri justifikasi anda.
Which van moves faster? Justify your answer.

[3 markah / *marks*]

Scanned with CamScanner

(a) (i) Tempoh/*Duration*

$= 3 - 1.5$

$= 1.5$ jam/*hours*

$= 90$ minit/*minutes*

(ii) $\frac{h - 120}{2} = 90$

$h - 120 = 180$

$h = 300$

(iii) $300 - 120$

$= 180$ km

(iv) $\frac{300 - 120}{0 - t} = \frac{120}{t - 4}$

$180(t - 4) = -120t$

$300t = 720$

$t = 2.4$ jam/*hours*

=2 jam/*hours* 24 minit/*minutes*

	11	30
+	2	24
	13	54

Jam 1354/ 1354 *hours*

(b) Laju Van *P/ Speed of Van P*

$= \frac{120}{1.5}$

$= 80\ km\ j^{-1}$

Laju Van *Q/ Speed of Van Q*

$= \frac{300}{4}$

$= 75\ km\ j^{-1}$

Van *P* bergerak dengan lebih laju dengan 80kmj^{-1}

Van P moves faster with speed 80kmj^{-1}

Scanned with CamScanner

13. Jadual 1 menunjukkan jarak dan masa perjalanan Nikky balik ke kampungnya untuk menyambut perayaan Kaamatan.

Table 1 shows the distance and time of Nikky's journey back to her village to celebrate the Harvest Festival.

Jarak/*Distance* (km)	0	60	120	120	180	240
Masa / *Time* (jam/*hours*)	0	1	2	3	4	5

Jadual 1 / *Table 1*

(a) Berdasarkan Jadual 1, lukis graf jarak-masa pada rajah di ruang jawapan.
Based on Table 1, draw the distance-time graph on the diagram in the answer space.

(b) Berdasarkan graf yang dilukis
Based on the graph drawn,

(i) nyatakan tempoh masa, dalam minit, Nikky berhenti,
state the length of time, in minutes, during which Nikky is stationary,

(ii) cari laju, dalam kmj^{-1}, pada 2 jam pertama,
find the speed, in kmh^{-1}, in the first 2 hours,

(iii) cari laju, dalam kmj^{-1}, pada jam yang terakhir,
find the speed, in kmh^{-1}, in the last hour,

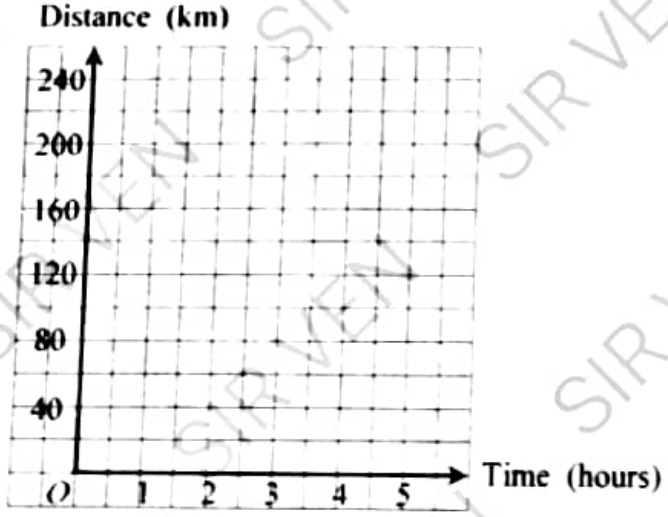
(iv) terangkan pergerakan bagi keseluruhan perjalanan Nikky.
describe the motion for the whole journey of Nikky.

[9 markah / 9 *marks*]

Jawapan / *Answer* :

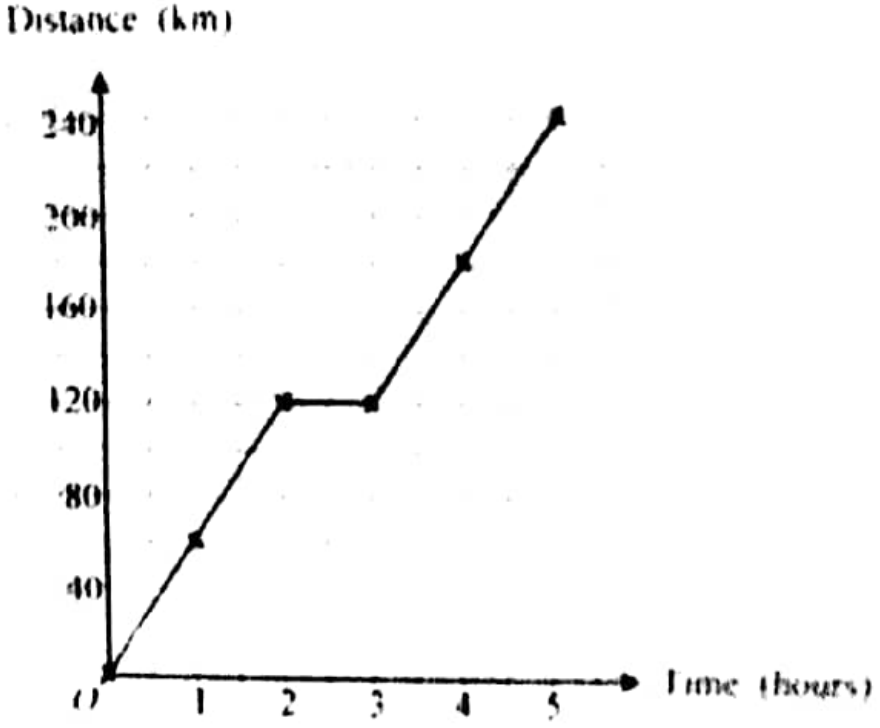
SABAH SET 3

(a)



Scanned with CamScanner

(a)



(b)(i) Tempoh masa berhenti

= 60 minit

(ii) Laju pada 2 jam pertama

$= \frac{120}{2}$

$= 60 \text{ kmjam}^{-1}$

(iii) Laju pada jam terakhir

$= \frac{240 - 180}{5 - 4}$

$= 60 \text{ kmjam}^{-1}$

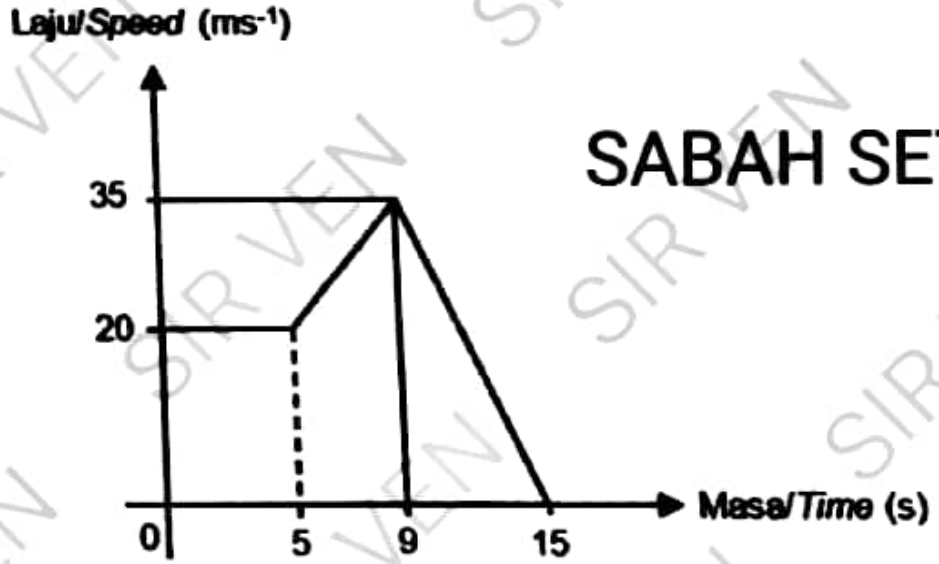
$= \frac{240}{5}$

$= 48 \text{ kmjam}^{-1}$

(iv) Purata laju Nikki bergerak dengan purata laju 48 kmjam^{-1}.

Scanned with CamScanner

). Rajah 10 menunjukkan graf laju-masa bagi pergerakan suatu zarah dalam tempoh 15 saat.
Diagram 10 shows a speed-time graph for the movement of a particle for a period of 15 seconds.



Rajah 10 / *Diagram 10*

Hitung jumlah jarak, dalam m, yang dilalui oleh zarah itu dalam 10 saat terakhir.
Calculate the total distance, in m, travelled by the particle in the last 10 seconds.

A 215

B 347.5

C 450

D 452.5

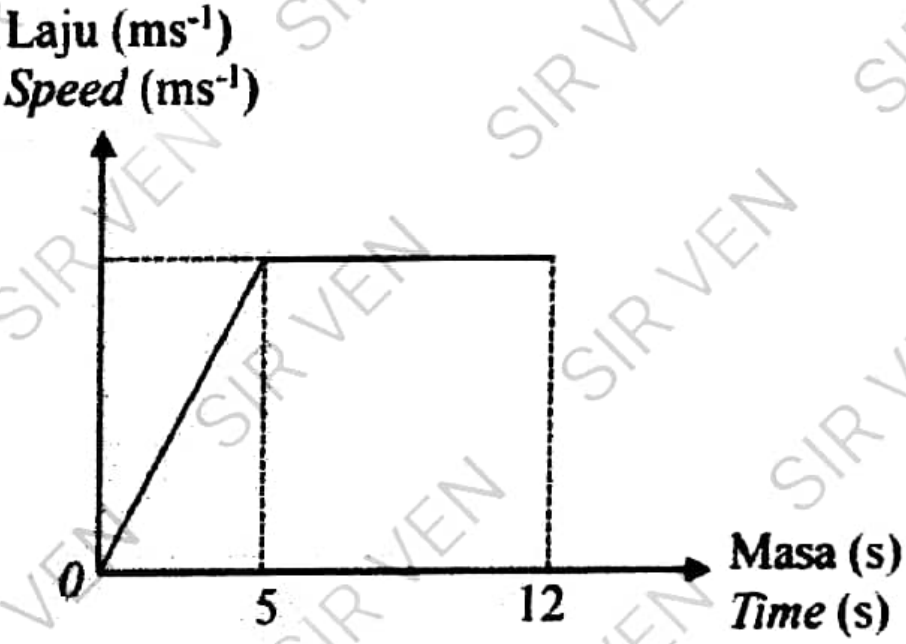
SABAH SET 5
SIR VEN
Scanned with CamScanner

Scanned with CamScanner

Rajah 6 di bawah menunjukkan sebuah graf laju-masa.

The diagram 6 below shows a speed-time graph.

SABAH SET 4



Rajah 6/*Diagram 6*

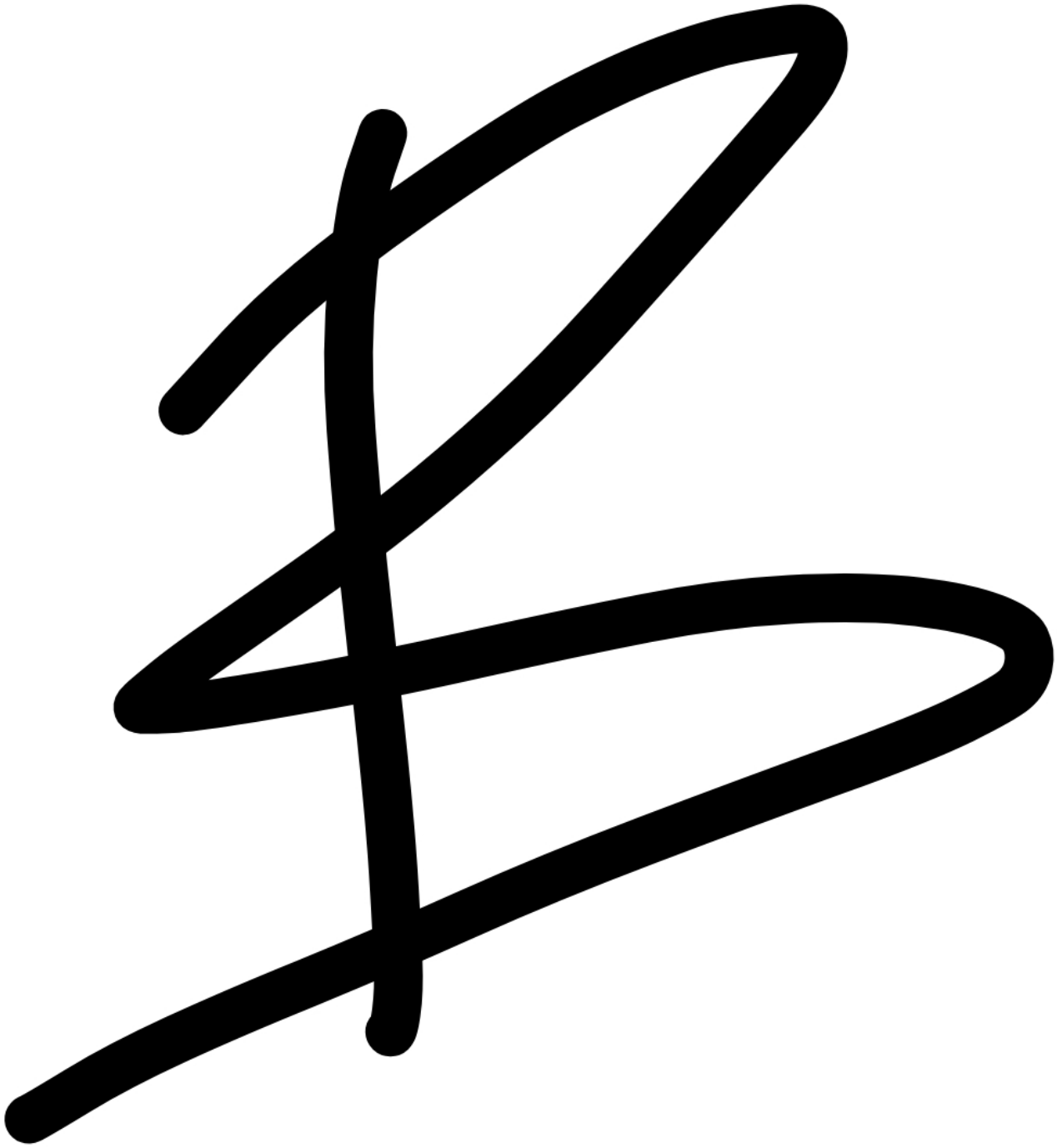
Cari tempoh masa, dalam saat, laju seragam objek itu.

Find the duration, in seconds, the uniform speed of the object.

A 5 **C** 12

B 7 **D** 17

Scanned with CamScanner



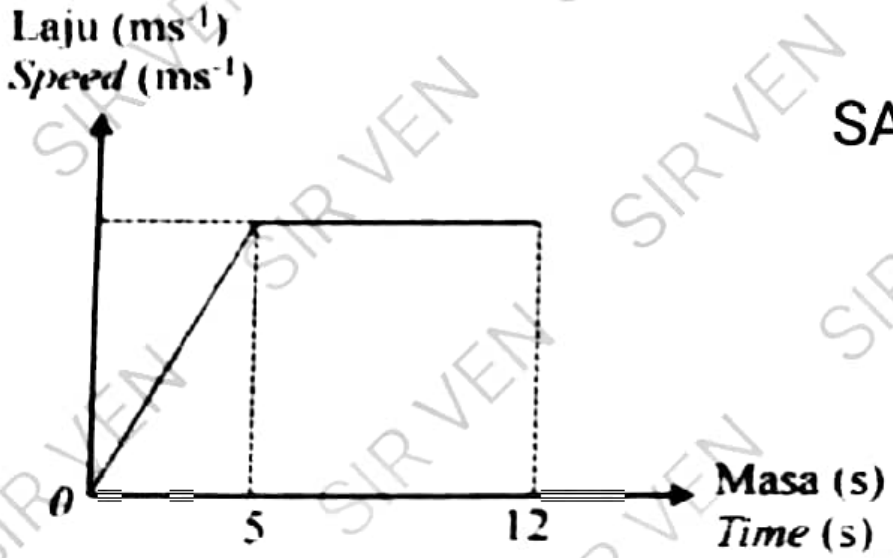
Scanned with CamScanner

. Rajah di bawah menunjukkan sebuah graf laju-masa.

The diagram below shows a speed-time graph.

Cari tempoh masa, dalam saat, laju seragam objek itu.

Find the duration, in seconds, the uniform speed of the object.



SABAH SET 2

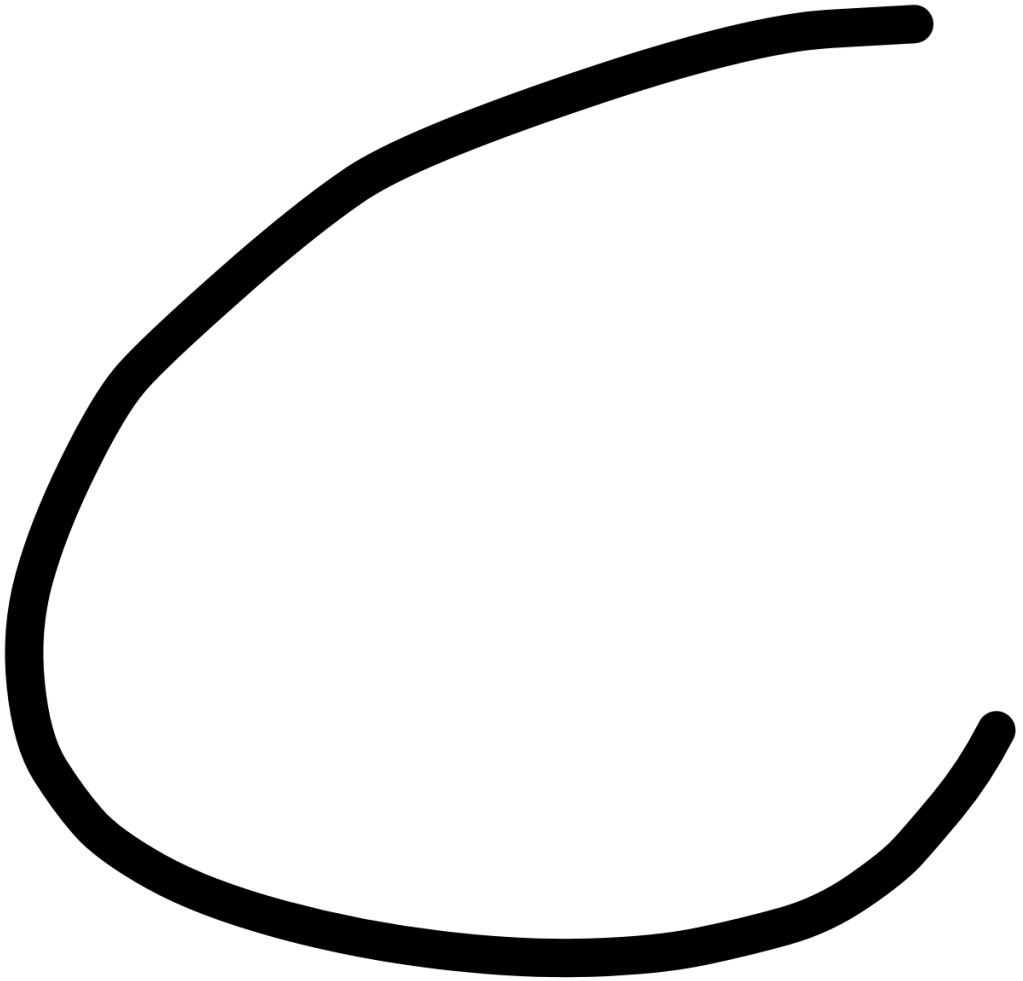
A 6

B 16

C 7

D 17

Scanned with CamScanner

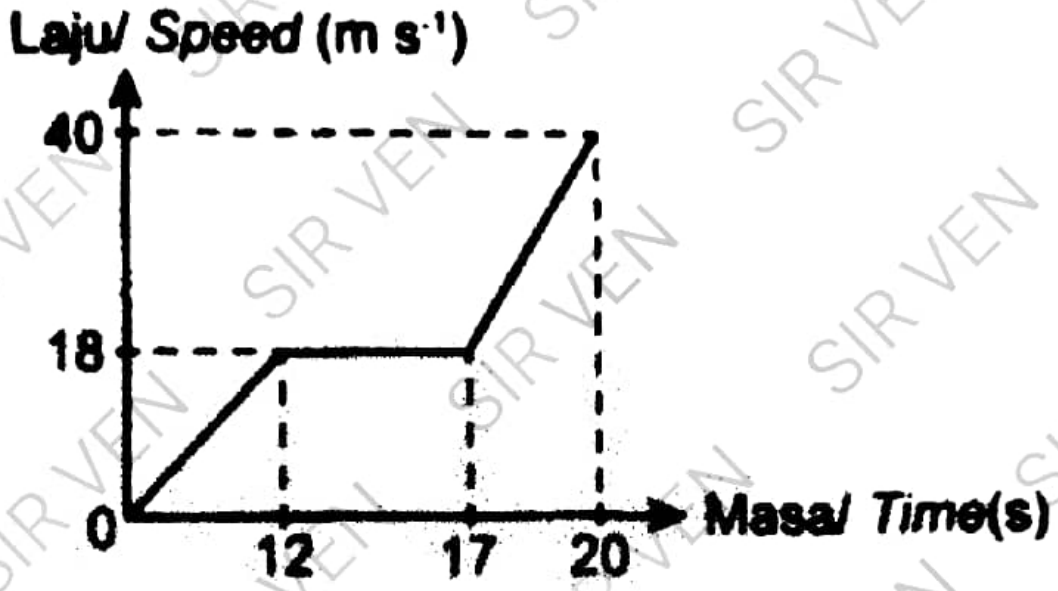


Scanned with CamScanner

Rajah di bawah menunjukkan sebuah graf laju-masa.

The diagram below shows a speed-time graph.

SABAH SET 2



Hitung pecutan, dalam ms-2 , bagi 12 saat yang pertama.

Calculate the acceleration, in ms-2 , for the first 12 seconds.

A 1.5

C 12

B 3

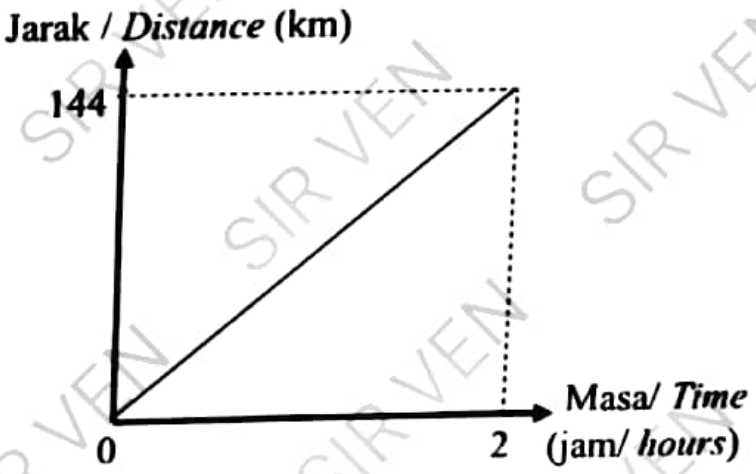
D 18

Scanned with CamScanner

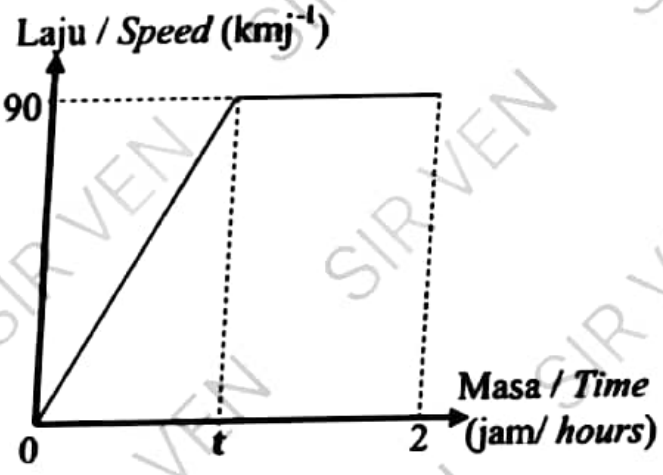
Scanned with CamScanner

24 Rajah 12(a) menunjukkan graf jarak-masa bagi perjalanan pergi Masyitah dari Kuala Terengganu ke Kemaman dengan menaiki kereta dalam tempoh 2 jam. Rajah 12(b) menunjukkan graf laju-masa bagi perjalanan balik beliau melalui jalan yang sama.

Diagram 12(a) *shows the distance-time graph for the journey of Masyitah from Kuala Terengganu to Kemaman by car in 2 hours. Diagram* 12(b) *shows the speed-time graph for her return journey through the same path.*



Rajah 12(a)
Diagram 12(a)



Rajah 12(b)
Diagram 12(b)

Hitung nilai **t**.

Calculate value of **t**.

A *0.8*

B *0.7*

C *0.6*

D *0.5*

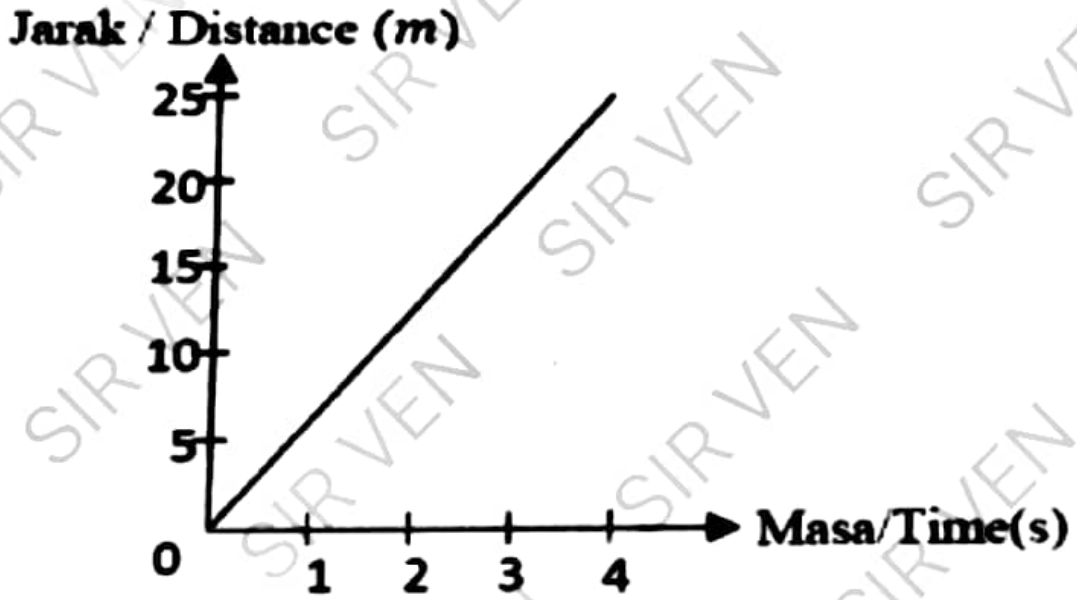
TERENGGANU (MPP3)

Scanned with CamScanner

Scanned with CamScanner

19 Rajah di bawah menunjukkan graf jarak-masa bagi gerakan suatu zarah.

Diagram below shows the distances-time graph for the motion of a particle.



Graf itu menunjukkan zarah itu
The graph shows that particle

SABAH

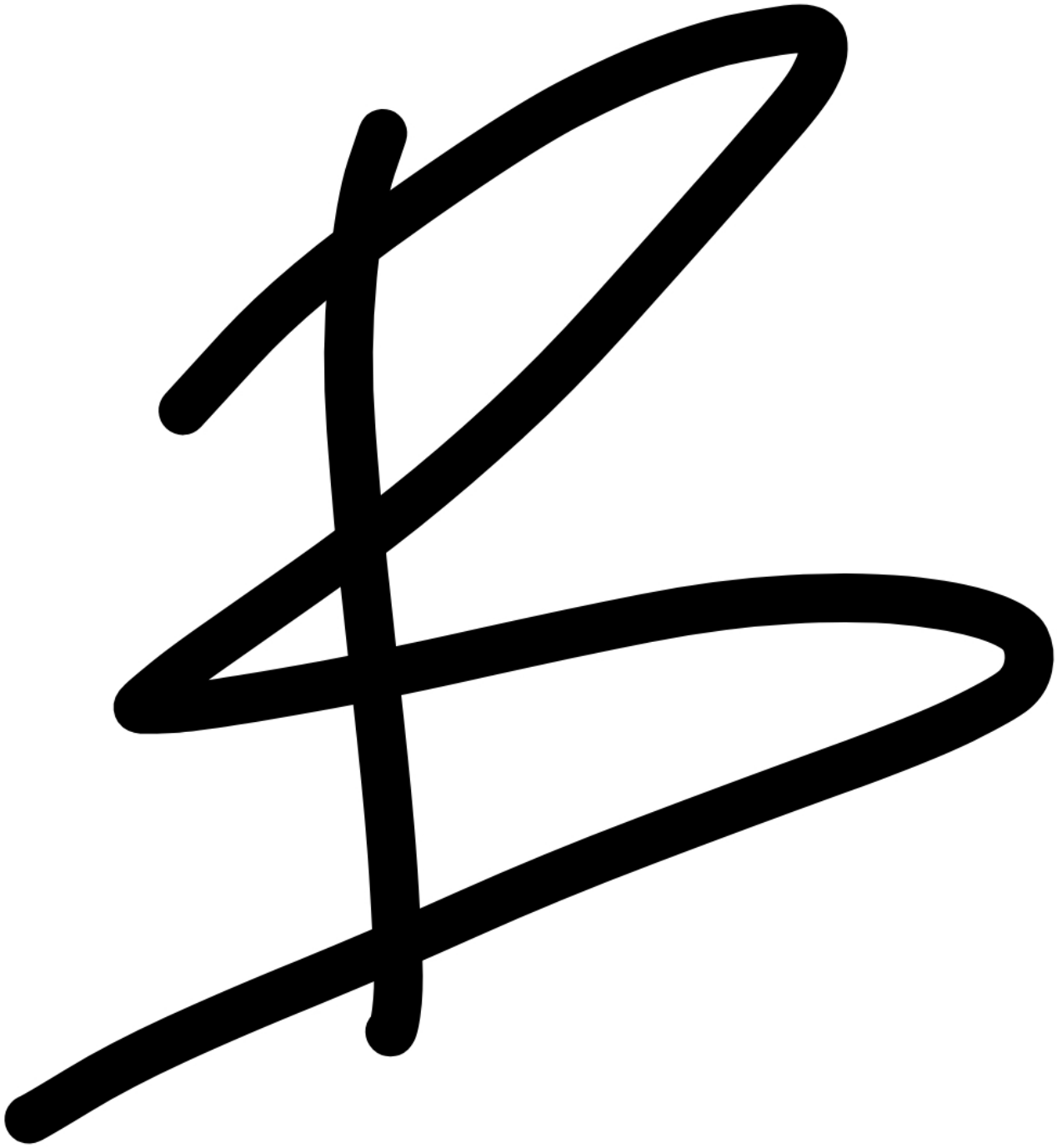
A. bergerak semakin laju
is moving faster

B. bergerak semakin perlahan
is moving slower

C. bergerak dengan laju seragam
is moving with a constant speed

D. berada dalam keadaan rehat
is at rest.

Scanned with CamScanner

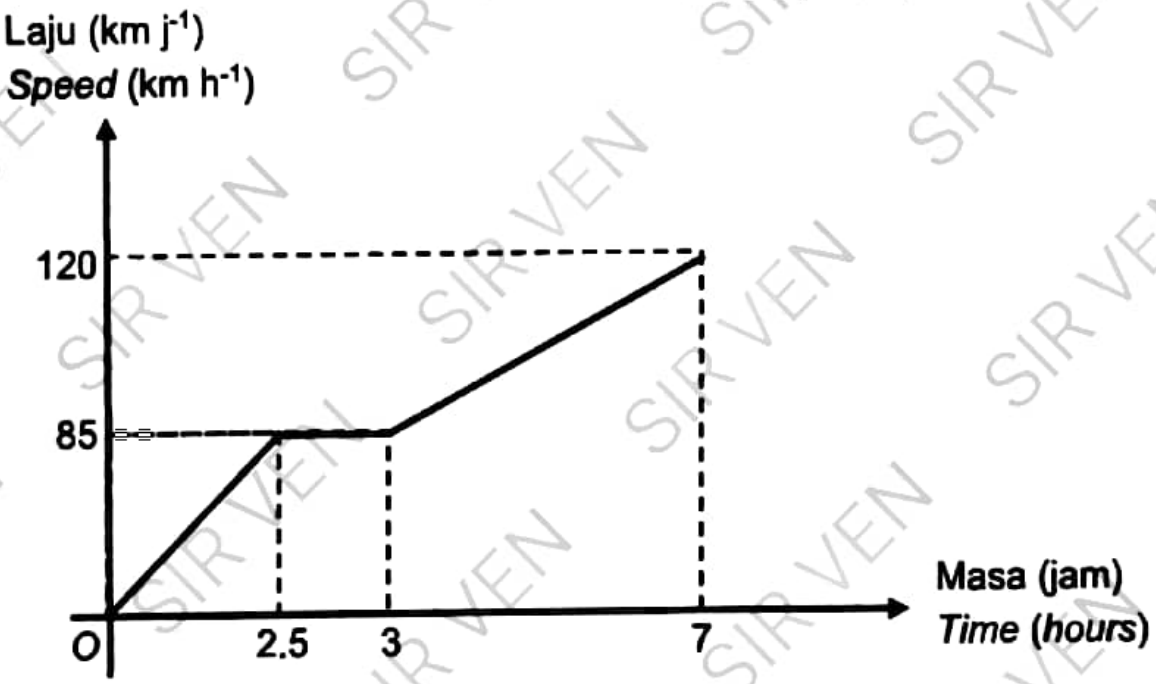


Scanned with CamScanner

Rajah 14 menunjukkan graf laju-masa gerakan sebuah kereta dari Masjid Tanah ke Kemaman.

Diagram 14 shows the speed-time graph for the movement of a car from Masjid Tanah to Kemaman.

MELAKA



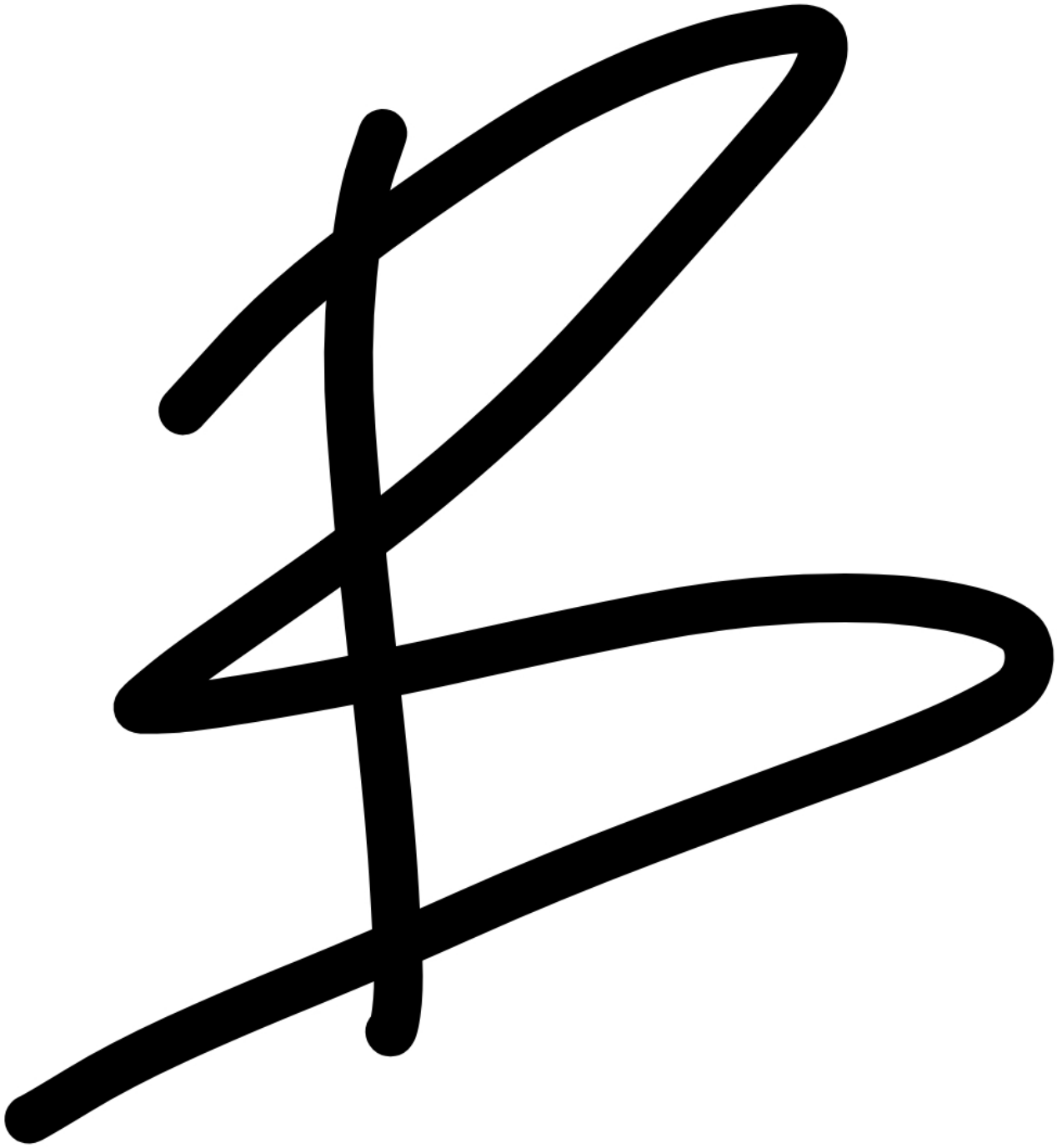
Rajah 14 / *Diagram 14*

Hitung kadar perubahan laju terhadap masa, dalam km j^{-2}, bagi 4 jam terakhir.

Calculate the rate of change of speed, in km h^{-2}, *for the last 4 hours.*

A	7.77	**C**	17.14
B	8.75	**D**	18.46

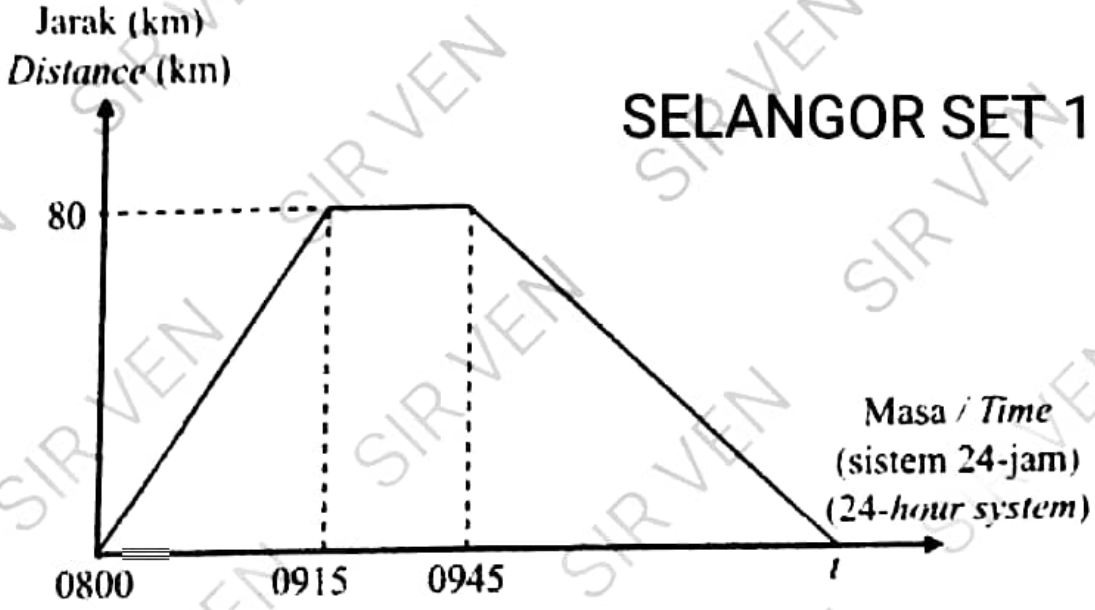
Scanned with CamScanner



Scanned with CamScanner

Graf jarak-masa di Rajah 13 menunjukkan perjalanan Catherina dari Bandar *X* ke Bandar *Y* dan kembali semula ke Bandar *X*.

The distance-time graph in Diagram 13 shows Catherina's journey from Town X to Town Y and back again to Town X.



Rajah 13
Diagram 13

Diberi laju pemanduan pulang ke Bandar *X* adalah $10\frac{2}{3}$ km j^{-1} lebih perlahan daripada laju pemanduan dari Bandar *X*.

Hitung nilai *t*.

Given the speed driven back to Town X is $10\frac{2}{3}$ km h^{-1} *slower than the speed driven from Town X.*

Calculate the value of t.

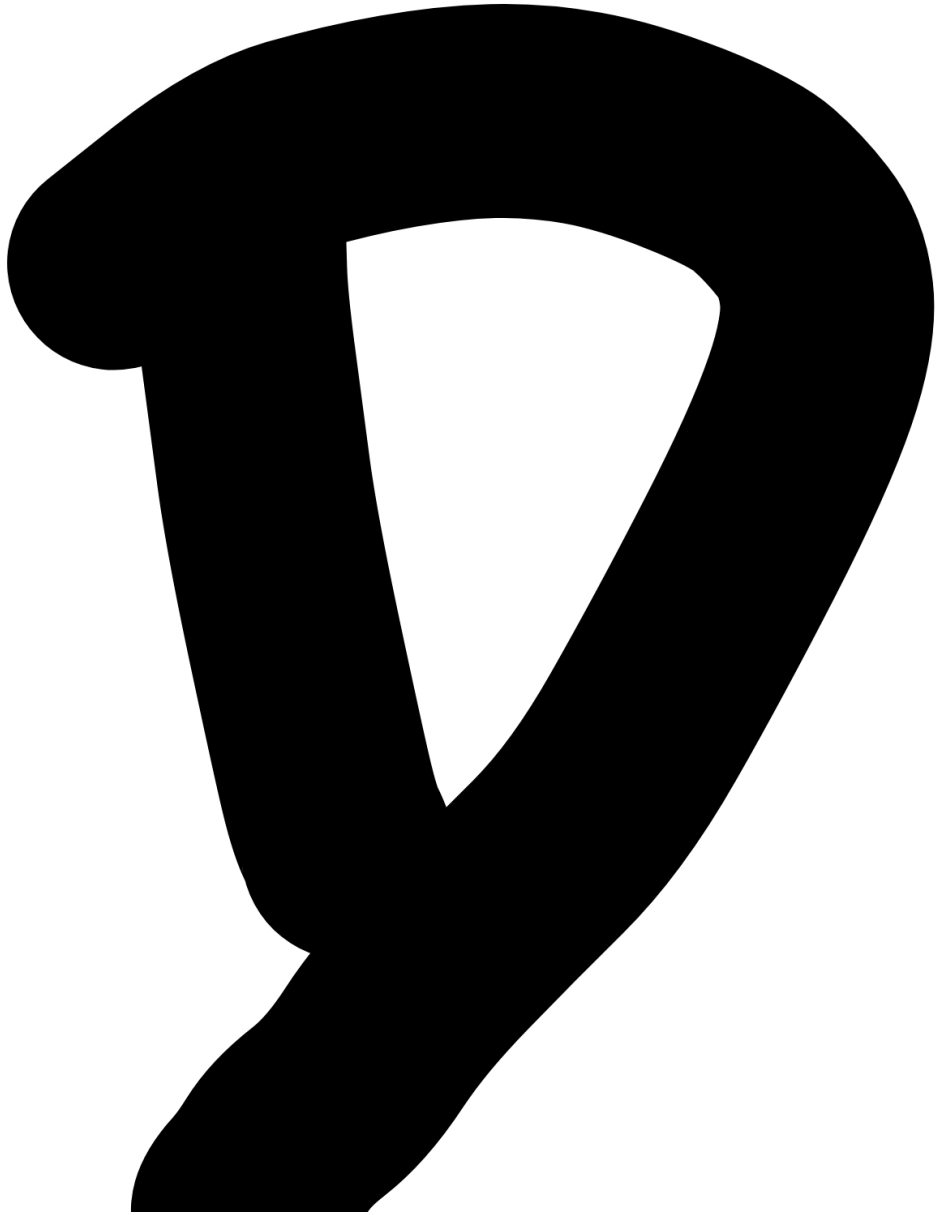
A 1035

B 1051

C 1100

D 1115

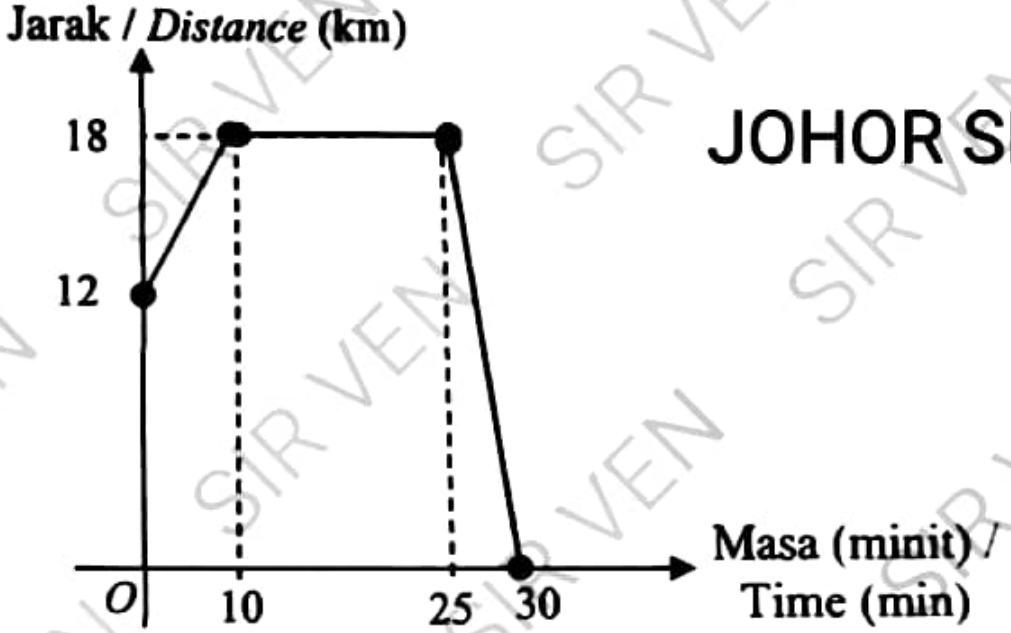
SIR VEN
SELANGOR SET 1
Scanned with CamScanner



Scanned with CamScanner

. Rajah 11 menunjukkan graf jarak-masa bagi sebuah kereta dalam tempoh 30 minit. Cari tempoh, dalam minit, di mana kereta itu pegun.

Diagram 11 *shows the distance-time graph of a car for a period of* 30 *minutes. Find the period of time, in minutes, during which the car is stationary.*



Rajah 11

Diagram 11

JOHOR SET 2

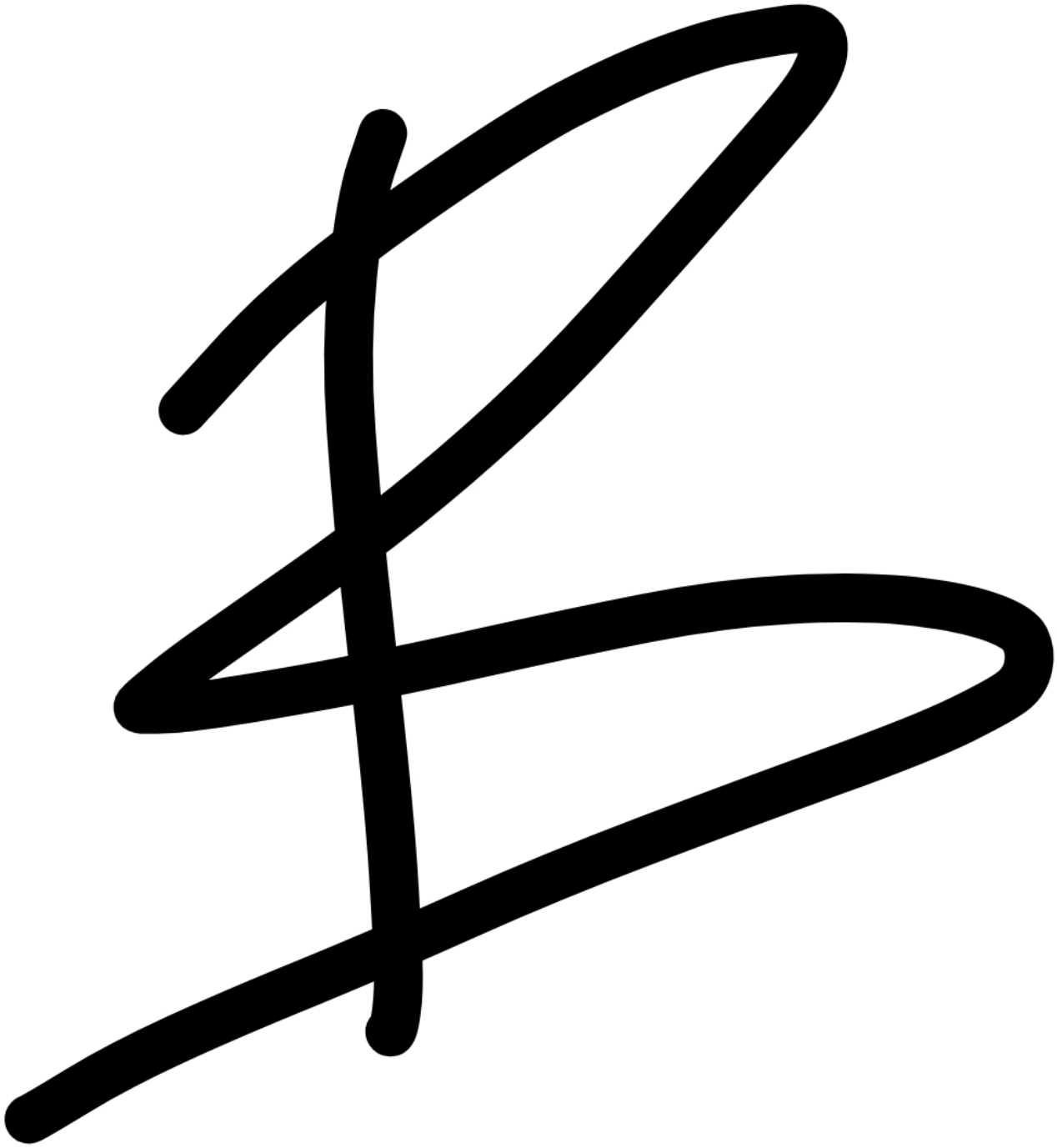
A 10

B 15

C 25

D 30

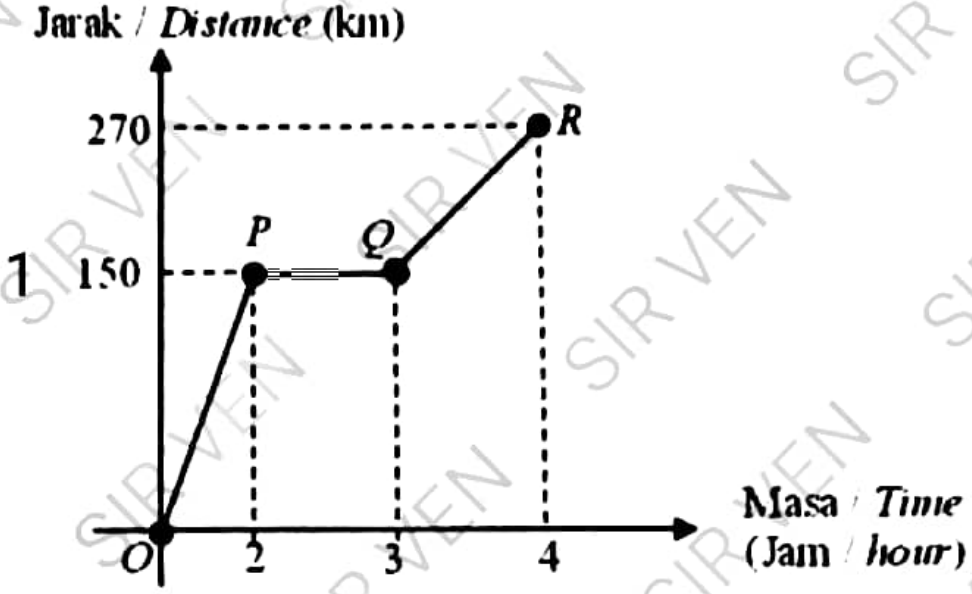
Scanned with CamScanner



Scanned with CamScanner

) Rajah 10 menunjukkan graf jarak-masa perjalanan Habib sejauh 270 km.
Diagram 10 *shows the distance-time graph Habib for a distance of* 270 km.

JOHOR SET 1

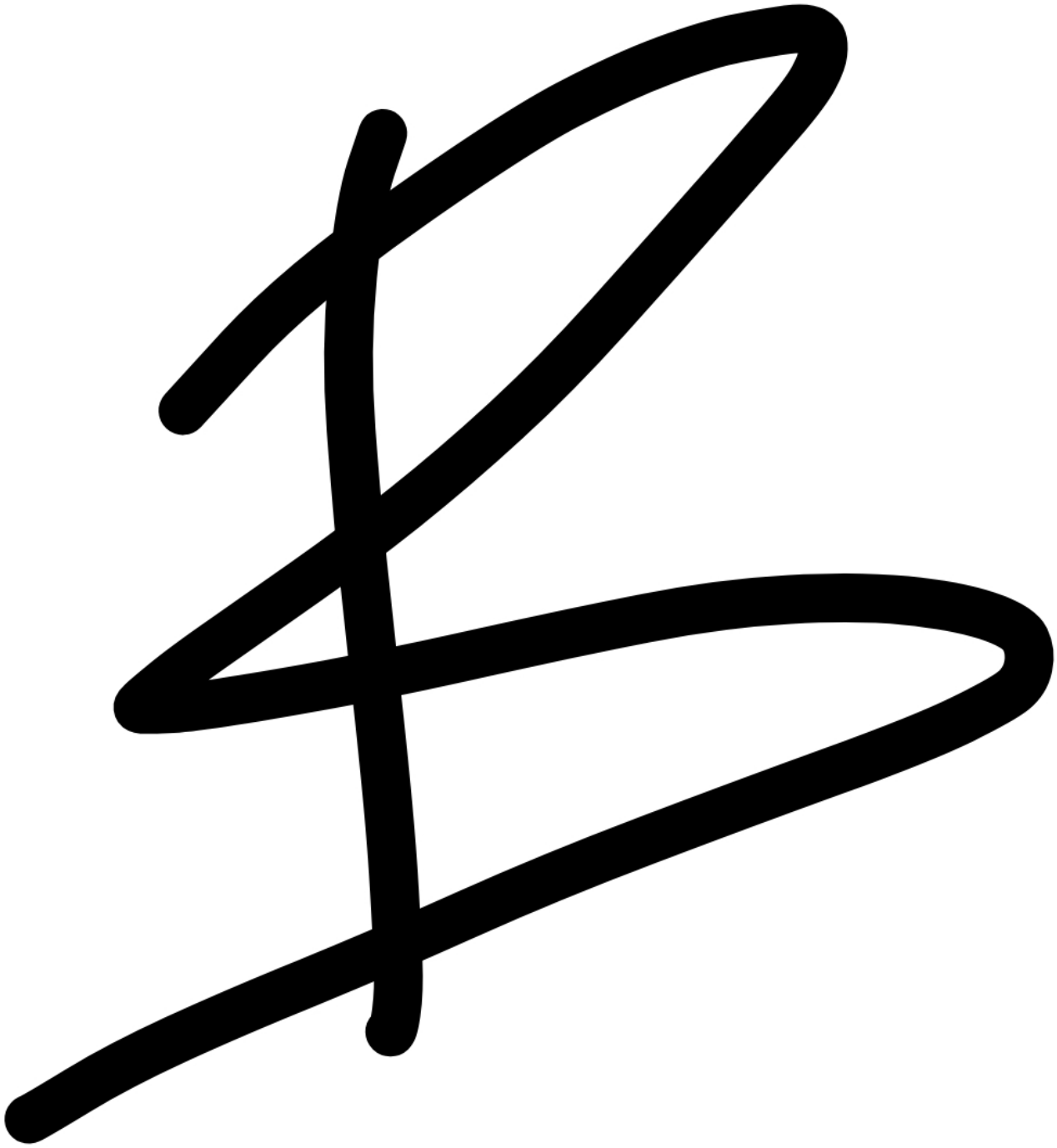


Rajah 10
Diagram 10

Tentukan tempoh masa dalam keadaan pegun dan laju perjalanan dalam tempoh 2 jam yang pertama.
Determine the period of time at rest and the speed of travel in the first 2 *hours.*

A 2 jam , 75 kmj^{-1} / 2 *hour* , 75 kmh^{-1}
B 1 jam , 75 kmj^{-1} / 1 *hour* , 75 kmh^{-1}
C 2 jam , 150 kmj^{-1} / 2 *hour* , 150 kmh^{-1}
D 1 jam , 150 kmj^{-1} / 1 *hour* , 150 kmh^{-1}

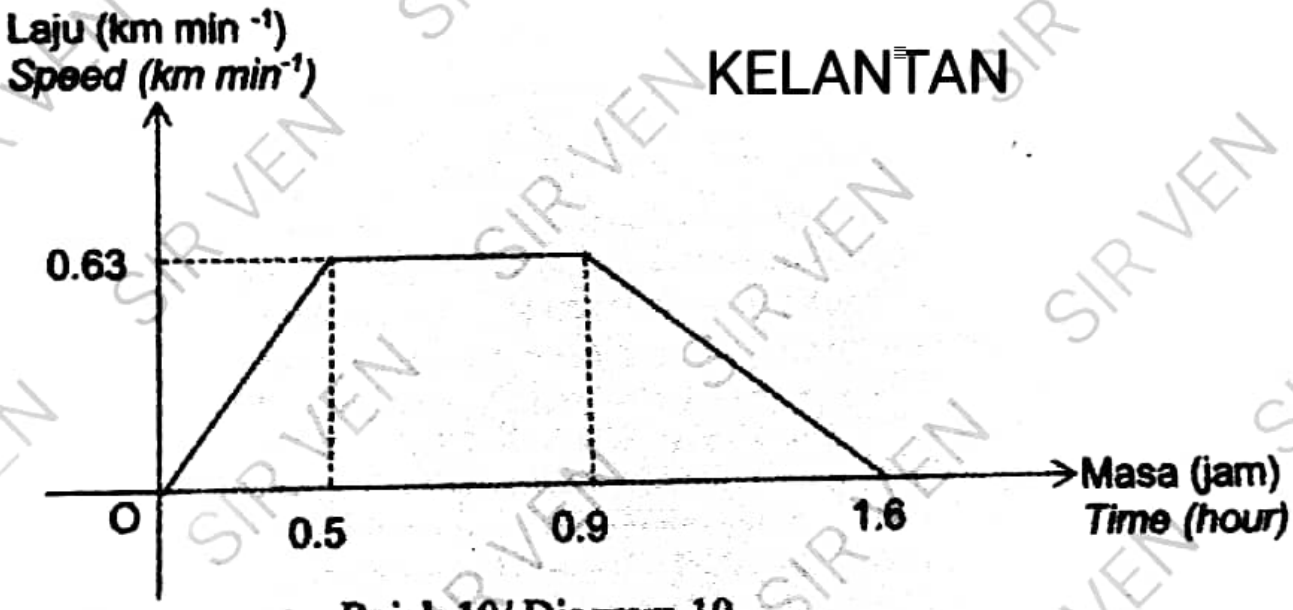
Scanned with CamScanner



Scanned with CamScanner

1. Rajah 10 menunjukkan graf laju – masa bagi sebuah kereta bergerak dari bandar P ke bandar Q.

Diagram 10 shows a speed – time graph for a car travelling from town P to town Q



Rajah 10/ Diagram 10

Cari pecutan, dalam km/min^2, kereta itu pada 0.7 jam terakhir.

Find the acceleration, in km/ min^2, of the car in the last 0.7 hour.

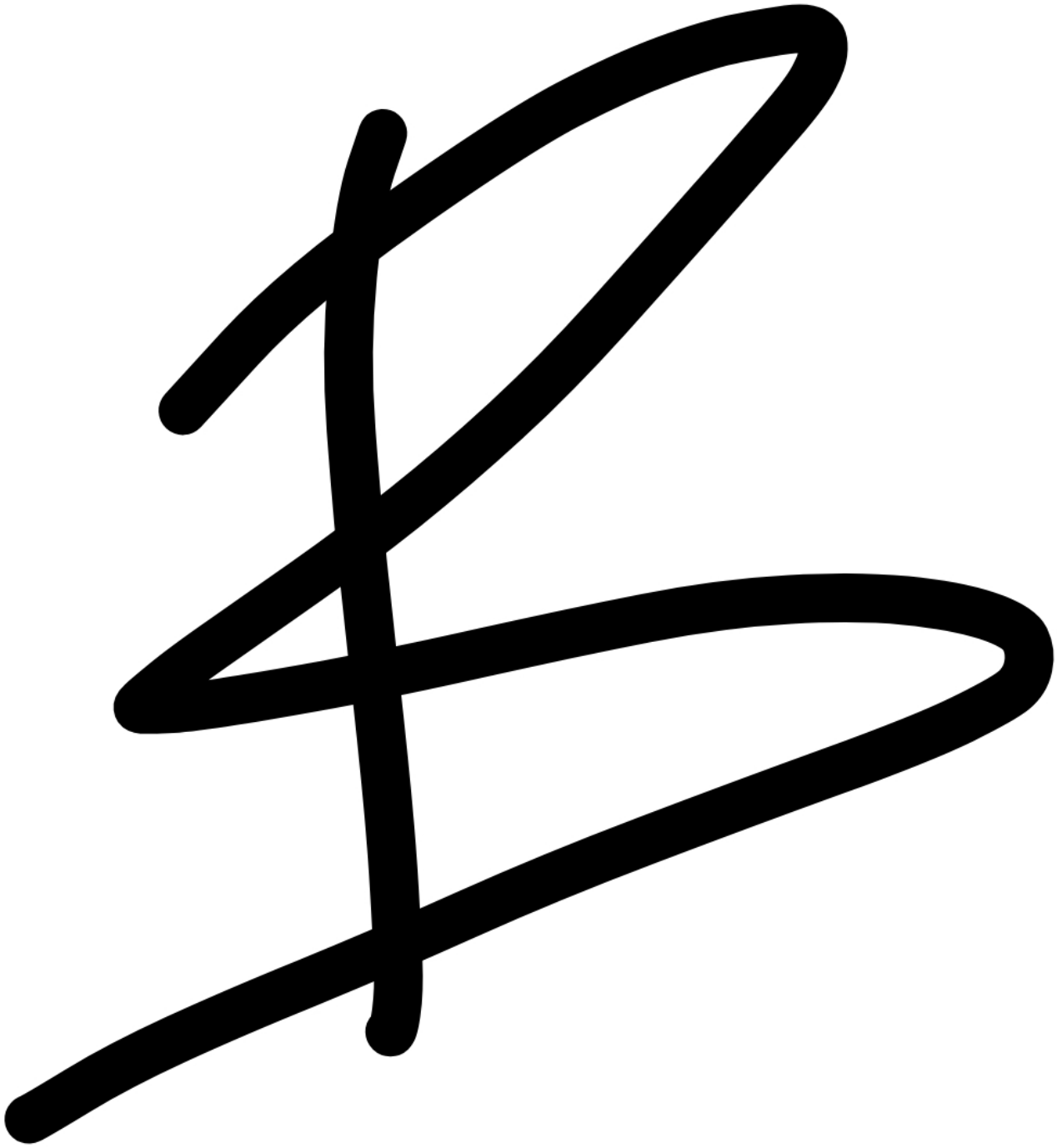
A - 0.9

B -.0.015

C 0.015

D 0.9

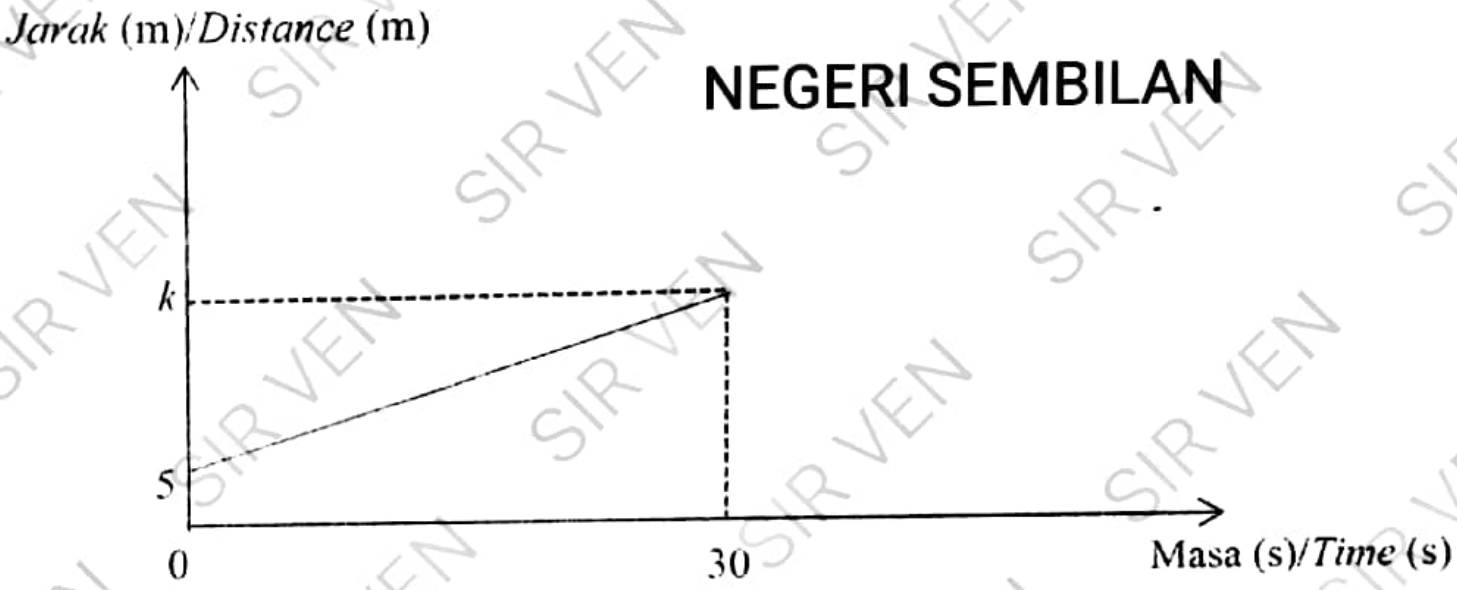
Scanned with CamScanner



Scanned with CamScanner

Rajah 5 menunjukkan graf jarak bagi masa bagi seorang pelari negara.

Diagram 5 shows a distance graph for time for a national runner.



Rajah 5
Diagram 5

Diberi bahawa laju pelari itu ialah 6 ms^{-1}, berapakah nilai *k*?

Given that the speed of the runner is 6 ms^{-1}, *what is the value of k?*

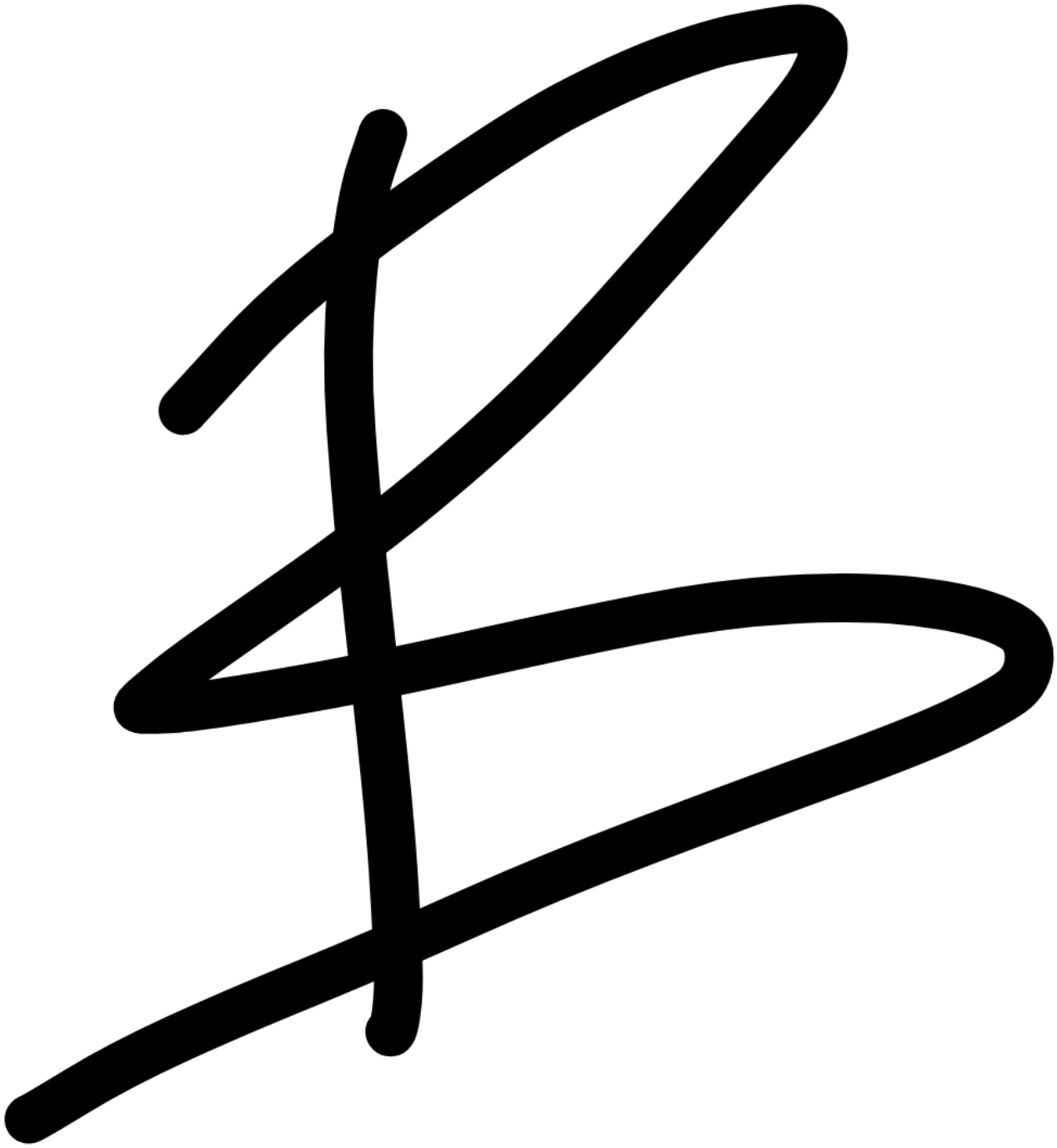
A 10

B 35

C 175

D 185

Scanned with CamScanner



Scanned with CamScanner